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Part 2

OVERSIGHT OF THE FAA

HEARING

BEFORE THE

SUBCOMMITTEE ON AVIATION

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

OVERSIGHT OF THE FEDERAL AVIATION ADMINISTRATION

SEPTEMBER 13, 1988

PART 2

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OVERSIGHT OF THE FEDERAL AVIATION ADMINISTRATION

TUESDAY, SEPTEMBER 13, 1988

U.S. SENATE,
SUBCOMMITTEE ON AVIATION,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D. C.

The Subcommittee met, pursuant to notice, at 10:00 a.m., in room SR-485, Russell Senate Office Building, Hon. Wendell H. Ford, (Chairman of the subcommittee), presiding.

Staff members assigned to this hearing: Steve Palmer, senior professional staff member; Carol Carmody, professional staff member; and Patty Hahn, minority professional staff member.

OPENING STATEMENT BY SENATOR FORD

Senator FORD. Good morning, ladies and gentlemen and welcome to you, Mr. McArtor. I understand you just returned from a trip overseas and we are glad to have you back with us in Washington.

Today marks the last FAA oversight hearing of the 100th Congress, and, I expect, the last while the agency is under the stewardship of Mr. McArtor and Mr. Burnley.

There are a number of issues which I wish to revisit this morning and several matters that need to be examined. This subcommittee takes its oversight responsibilities very seriously. We want the safest possible airspace system for the traveling and flying public.

Since the FAA is the agency charged with safe operations of the national airspace, we must take a close look at that agency; at how it is managed, at how it uses its resources, at its goals and priorities, and its success in meeting them.

In the oversight hearing last March, where you appeared, Mr. McArtor, I said I was concerned that the maneuvering between FAA and DOT was siphoning off the energies of the fine people of FAA and was diverting them from the paramount task of assuring air safety.

That was before your last two reorganizations. Now I worry that people at FAA are spending all their time moving offices and studying reorganization charts. I worry about the Agency's attention to its mission. I worry about its responsiveness, and I worry about its morale. I worry about its procedures, like inspecting a presidential candidate's plane shortly before scheduled take off instead of early that day or the night before. I would like to worry less and maybe you can help me do that.

We were all saddened by the Delta crash in Dallas on August 31st, and we would be interested in anything you can tell us about the circumstances.

I realize that the NTSB is still investigating and that the cause of the accident has not been determined as yet. Still I wonder if the details of the crash suggest any areas to you where the FAA might do more work to improve safety.

For example, we know that human error is a factor in over 65 percent of commercial airline accidents. There has been some speculation about that in the Delta accident. When we have statistics that point to a problem, we must make a commitment to find some solutions.

Last month Senator Kassebaum and I introduced legislation which would provide that 15 percent of the authorized levels for research engineering and development would be used for research on human factors as well as for aging aircraft and low flammability fuel.

We would like to hear from you what you might have done in the human factors area, what you expect to do and what may be needed in the future.

We understand that the FAA now is involved in certifying the tiltrotor, and is using research funds to do so. Since the tiltrotor program was not budgeted in Fiscal Year 1988 or Fiscal Year 1989, the Committee is interested in the source of the funding and in what research projects will be deferred because of it.

Recently, the FAA announced a number of improvements in air traffic controller recruitment and training, which would speed the controller's progress toward full performance level. We would like to know if these programs are underway and if so, how they are helping the FAA meet the statutory goals for the controller work force.

Senator Stevens, do you have a statement?

OPENING STATEMENT BY SENATOR STEVENS

Senator STEVENS. Mr. Chairman, I am pleased to be here with you this morning and I am pleased that you have asked questions about the tiltrotor. I want to start off by commending my friend for his emphasis on the tiltrotor and for recognizing what it means to civil aviation.

As one who has pushed this concept through the military and insisted that it be accelerated, I am happy to be here. You have the opportunity to explain to the committee and to the public at large what the tiltrotor means to relieving congestion for the commuter traffic between cities that are very close together.

Relieving the congestion is necessary to ensure the continued increase in our transcontinental and transoceanic flights.

Now, I think that your statement, which I have already read, is a good statement. I am not sure we need to get into the question of the inspection of a presidential candidate's airplane. I wonder what would happen if the airplane had not been inspected and something had been wrong with it.

Senator FORD. I suspect we will get into that, Ted.

Senator STEVENS. I have never been one to question an inspector taking time to look at my airplane and I think I have flown as much as any man in this room in my lifetime. But I have redlined airplanes, I have allowed people to redline airplanes, and I have insisted on other people's airplanes being redlined, and I would never criticize an inspector for exercising his judgment with regard to an airplane.

So I am happy to be here with you, my friend, and I see our distinguished ranking member is here.

Senator FORD. And we are delighted to have Senator Kassebaum. As the ranking member, we have always worked very closely together and I look forward to her help this morning and her opening statement.

OPENING STATEMENT BY SENATOR KASSEBAUM

Senator KASSEBAUM. Thank you, Mr. Chairman. Mr. McArtor, it is a pleasure to welcome you. I would just say, Mr. Chairman, that I think this is a very important hearing and I would commend you and the Administrator for your skill in going through a minefield of problems during the past year and coming out with some real successes.

Reauthorization of the trust fund was a major achievement. I look forward to this hearing because I still feel we have some major problems related to inadequate capacity of the system.

I think from the standpoint of the NAS plan as well as the airport improvement program, funding issues are critical. And, Mr. Chairman, I look forward to addressing some questions during today's hearing.

Senator FORD. Thank you very much, Senator Kassebaum.

I have an opening statement that the Chairman, Senator Hollings would like to have included in the record.

[The statment follows:]

OPENING STATEMENT BY THE CHAIRMAN

Today, as we approach the end of the 100th Congress, we are fortunate to have the opportunity to hear from Federal Aviation Administrator, Allan McArtor. I commend Senator Ford, Chairman of the Aviation Subcommittee, for taking time to ensure that this Committee has a complete understanding of the on-going efforts by the FAA to enhance aviation safety and security.

In the past few weeks, we have seen several tragic aviation accidents that serve as constant reminders that we need to do more to the area of air safety. The accident in Dallas last month was miraculous in that there were so many survivors. Yet, the 14 fatalities that resulted from that accident highlight the fact that we need to better understand why the accident occurred, what material burned in the resulting fire and how fast, what happened to the fuel and fuel lines, and how the passengers escaped. Each of these questions must be satisfactorily addressed before we can tell the hundreds of millions who fly each year that we have done all that can be done to enhance air safety.

I hope that we can also question Administrator McArtor, himself a former member of the Thunderbird aerial performance team, on the safety of air shows in this country, particularly following the spectacular mid-air collision last month of three Italian high performance jets at an air show in West Germany. While, to date, there has not been a single death resulting from an accident at an air show in this country, the sudden loss of nearly 50 lives in West Germany illustrates the importance of ensuring spectator safety at such demonstrations.

With only four weeks left in this Congress, consideration of a number of critical aviation bills remains to be completed. I hope that today's hearing will allow us to discuss a few of these with the Administrator. For example, Senator Kassebaum has introduced legislation to restructure FAA research and development priorities. This bill requires the FAA to develop a better understanding of the relationship between human factors and air safety, it also calls for increased attention to areas such as aviation maintenance and fire safety, and it directs the FAA to focus a portion of its R&D on long-term activities.

And like the Chairman of the Aviation Subcommittee, I worry that air safety may have become too politicized in the past few months. I am a cosponsor of S. 1600, legislation to establish an independent FAA, a bill which is the product of months of hard work by Senator Ford. While S. 1600 has already been approved by this Committee, it may be helpful to seek out Administrator McArtor's views on this bill, as it very clearly would affect the operations of the FAA.

Mr. Chairman, I appreciate your providing time for my statement and I look forward to the testimony of our distinguished witness.

Senator FORD. Now, Mr. McArtor?

We have a lot of ground to cover this morning, Mr. McArtor, and there will be a lot of questions. So you may begin, and I hope you can summarize your statement.

STATEMENT OF HON. T. ALLAN McARTOR, ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION

Mr. McARTOR. Thank you very much, Mr. Chairman. I welcome this opportunity to appear before the Subcommittee today to discuss the status of FAA's efforts to increase the safety and efficiency of our air transportation system.

Much has changed since I became Administrator a little over a year ago. I promised at that time that I did not intend to rely too much on statistics to tell us whether the system was safe. But the overall improvements we have seen in various aviation indices this part year have been impressive and encouraging and deserve notice.

Coupled with significant progress in programs under our National Airspace System Plan, I feel that we have gone far towards meeting our Impact '88 goal of recapturing public confidence in aviation, while at the same time accelerating the modernization of our nation's airspace.

You will recall last summer, we experienced too many incidents of pilot deviations, near midair collisions and operational errors. Delays continued to frustrate the traveling public. "Newsweek" called it the year of the "near miss." Others used colorful phases like "operating at the redline."

The flying public did not deserve to have this image created about their national airspace, so the FAA and the aviation professionals in this country answered the challenge to do something about it.

Since that time, we have begun dozens of initiatives including going directly to what appeared to be a key source of the problem, the need to improve the human side of the system, air crew and controller professionalism, crew coordination and communication, and what I felt may have been an apparent lapse in the commitment to excellence on the part of some, which we in aviation must never lose sight of.

Our Impact '88 program reached out to the aviation professionals, from pilots to technicians to corporate executives and air traffic controllers, establishing comprehensive programs and initiatives to involve and include the professional in restoring public confidence.

The results speak for themselves. Reported near midair collisions through July decreased 27 percent from the comparable period last year. Operational errors dropped 19 percent during the comparable timeframe and runway incursions dropped some 50 percent over the last year.

In concert with the Office of the Secretary of Transportation, we have worked with the airlines to adopt more realistic scheduling practices while at the same time FAA successfully brought on line the hew Host computers and other advanced technologies in our national airspace system.

Once again, the data underscore our success. Delays were down 14 percent for the fist six months of 1988, compared to the same period last year, despite the continued dramatic increase in total air operations.

The drop in delays this year follows a 15 percent increase in 1987 from 1986. Moreover, delays now have declined in 10 of the last 12 months when measured against the same months in the preceding year.

We have accomplished other significant changes as well, but before outlining those advances, we do well to remind ourselves that much more remains to be done.

The tragic accident on August 31st which occurred in Dallas underscores for us all that no matter how good system indicators are and no matter how much we have done to improve the system, we can never be complacent about safety.

There is always somemore that we can do and we must tap the vast reservoir of initiative, talent and ingenuity of the professionals in our aviation community, both within and outside of government, to help us make those continued strides.

Impact '88 was just such an effort. I take great pride in the optimistic schedule of actions we set out to systematically accomplish and even greater pride in what we have actually accomplished.

We have done extensive work on the first major revisions to aircrew training requirements in over 20 years. This Fall, we will publish an advisory circular concerning cockpit resource management programs, and expect to publish an NPRM in the near future, dealing with cockpit resource management training and proposing major improvements in commuter training.

In addition, we propose to publish a final rule this year which will establish a voluntary advanced qualifications program for flight crews.

New emphasis has been placed on human factors, not just for pilots but for controllers and maintenance personnel. In terms of airspace management, we have increased the capability of our flow control system so that, based on an update every five minutes, we can determine the location of each IFR aircraft anywhere in the system.

New Apollo software was operational last spring. We can project up to four hours in advance where we will have traffic problems. With regard to the NAS Plan, contracts are underway or completed for 92 percent of the projects.

We have reached out to our employees through focus groups to hear first hand what changes we need to implement to help them do their jobs better. And we have made changes, many of them on the spot in respond to employee concerns.

A streamlined hiring system for air traffic controllers is now in place, which will reduce the time to hire an individual from 12 to 18 months down to 45 days.

We will sponsor an International Civil Aviation Security Conference in October.

We strengthened our detection requirements for test objects used in our screening program and have tightened up enforcement in this area. As a result, undetected test objects have been declining over the past year.

In the area of drug interdiction, we have strengthened our working relationship with other Federal agencies, including regulatory changes and improved information access to benefit law enforcement agencies.

For example, we are currently participating in a joint training effort with U.S. Customs aimed at sensitizing FAA aviation inspectors, in the course of routine safety inspections, to look for aircraft modified for drug smuggling. We have formed a dedicated drug unit with permanent staff, and enlisted the support of our aviators and mechanics.

By the end of this month the En Route Conflict Alert IFR/VFR Mode C intruder function will be operational at all air route traffic control centers and will warn controllers when action needs to be taken to avoid possible conflicts in the en route environment.

The Enhanced Terminal Conflict Alert will be operational at 65 percent of terminal facilities by September 30th, and will assist controllers in avoiding conflicts in terminal airspace.

We held an aging aircraft symposium and have put together a comprehensive program to help us understand and better deal with high-cycle aircraft maintenance programs and, in particular, inspection criteria and methods.

You will note that many of our activities have centered around people, what we call human factors. I am a firm believer that the biggest safety dividends we can achieve in the near term will result from improvements we can make in the human performance part of the safety equation.

Much of my focus has been on the pilot and the controller, and we will continue to place a strong emphasis on pilots and controllers, but we also have to look at others as well, and we are doing that.

In conjunction with our aging aircraft program, for example, we are examining human factors associated with aircraft inspections to ensure that procedures and requirements for inspections can be reasonably and consistently adhered to by inspection personnel.

We need to do more in this area to ensure that the human element is fully addressed. We cannot concentrate our efforts on hardware alone. You have heard me speak many times on the integrated relationship between people, equipment and procedures. All three must be modernized to preserve the discipline and precision in our system.

As you are aware, change in the recruitment, hiring, training and retention of air traffic controllers has been a cornerstone of my initiatives this year.

We know that many of our future leaders in the FAA will come from the ranks of our controllers and technical personnel and our recruitment and training needs to reflect that fact. We need to have an aggressive recruitment program which brings us the best candidates available.

So we plan to assemble a team of recruiters around the country who will bring new focus to our recruitment efforts, and we are going to develop the best entry standards and tests that select the candidates with the best chance of succeeding. The theme once again is proactive, not reactive.

Our controller training program has produced many outstanding controllers in the past, but as we move towards a new air traffic control environment, with changing technology and demands, our training and recruitment must change also, to assure that we continue to properly match skills and job requirements.

Also, we have been washing out about 40 percent of our controller trainees during the initial screening process at that Academy. That costs us approximately $14 million a year. Controllers who make it through the screening process then take an average of three years to reach the full performance level, while requiring significant amounts of on the job training. This is also costly and inefficient.

While the controllers we have trained in the past are highly qualified, I am concerned about finding the best talent available, offering them jobs as quickly as possible, and completing their training both efficiently and effectively, with far greater reliance on tower cab and radar screen simulation and other state of the art training tools.

And that is what our program is designed to accomplish. We will be competing with the rest of the market place for talented men and women in the 1990s and beyond. We have a great career opportunity and we do not want to take a back seat to anyone.

We must change the way we select and train a cadre of professional instructors to match our new training methods of the future, involving our very best controllers to train others. We are going to change our approach to the on-the-job training process with an emphasis on high tech, high-fidelity simulator based training that will duplicate actual control facilities across the country.

We are currently in dialogue with the academic and corporate worlds to rethink the curricula used in training all of our technical personnel, including air traffic controllers, ensuring that it is keeping pace with new educational techniques and training technologies.

More importantly, our training must be designed to keep our employees in step with the demands of the rapidly advancing technology of our air traffic control system.

We have given considerable thought and time to developing a comprehensive approach to improving controller training. We have already initiated our program to reduce controller hiring time from 12 to 18 months down to 45 days.

We start development of the new screening device for controllers next month, with a goal of substantially reducing the 42 days screening time. We expect that it will be a one year effort to develop the screen, and will take one year to validate it.

Early next year we plan to have our formal recruitment program initiated and to have a designated and trained recruiter in each region.

Next month we will begin to train OJT instructors with our improved course and will initiate an intense evaluation of OJT instructors by April of next year. The capacity now available with our new Host computers has already allowed us to significantly expand the en route center simulation training capability.

In addition, we are exploring the use of small stand-alone simulators to further enhance this capability at our centers as well as at our terminal facilities. Our redesigned En Route curriculum will be initiated in July 1991, along with the commencement of training on an Academy Tower Cab Simulator.

We plan to begin training with the redesigned Terminal curriculum in December 1991. At that time we will also begin training in Radar Training Centers, using high-fidelity site specific simulation.

As you can see, the revamping of controller training is on an aggressive schedule. It is a high priority program within the agency, and is receiving appropriate emphasis to ensure that it is brought on line in a timely way.

I trust the Congress will fully support this program that has such an important impact on aviation safety, airspace management efficiency and FAA organizational productivity.

Advanced technology is major part of Impact '88 and as I noted earlier, much has been accomplished in terms of introducing new concepts and technology into our air traffic control system.

But perhaps one of the most promising technologies to come along in a long time is the tiltrotor, which combines the advantages of both rotorcraft and fixed wing aircraft, offers new solutions to ease congestion at major airports and will dramatically change inter-urban transportation patterns for years to come.

An FAA memorandum of agreement with DOD permits us to participate jointly with them in the test and evaluation of the V-22. This enables us to conduct a parallel certification effort rather than having to wait until completion of the military's work. This should shorten the time necessary to certificate the tiltrotor by as much as five to eight years.

By conducting FAA certification and R&D efforts now, while the military is developing the V-22 program, will save the government and industry millions of dollars in costs and resources compared to beginning our efforts after the military tiltrotor program is complete.

I am confident that the benefits we will obtain through these planned efforts will bring substantial payoffs to the American public.

Before closing, Mr. Chairman, I would like to quickly bring you up to date on our recent reorganization. We have now put in place our straightlining of field operations. Field organizations today are operating under the guidance and oversight of their counterpart Washington offices.

We have already begun to reap the benefit of consistency of policy implementation across the country. Certainly it will take us a period of time to get where we need to be, but straightlining provides us a good framework in which to continue that progress.

The straightline approach we have adopted has been complemented by an added organizational realignment through which I have established four executive directors in the agency. These executive directors report directly to me and are responsible for providing general policy guidance and executive direction to my associate administrators who are most immediately responsible for exercising oversight over agency activities.

They will help formulate long range planning for the FAA and will help us do the kind of strategic thinking necessary to keep us ahead of the growing demands of air commerce. My associate administrators continue to be the principal means for implementation of agency programs and oversight of those activities on a continuing basis.

I feel strongly that the reorganization I have implemented will, over time, strengthen the FAA. The new management structure also paves the way for a quicker agency acceptance of Congressionally mandated organizational change, should recent legislative efforts result in the type of broad based changes best outlined by Secretary Burnley last Spring.

As you know, it takes a while to move our way through any significant period of change, and we are still in transition now, but nearly over the hump. We are continuing to momentum for positive change within the FAA, and I am pleased with the management team we have in place to help us achieve our goals.

In closing, Mr. Chairman, I would like to thank you personally for the opportunity to appear today and for your continued efforts to help the FAA better manage the challenge facing civil aviation today and the demands of the future, and to all the members of the Subcommittee for their valuable counsel and encouragement.

That completes my statement, Mr. Chairman. I would be glad to respond to your questions at this time.

Senator FORD. Thank you, Mr. McArtor. We have been joined by Senator Danforth. Senator, do you have any opening statement you would like to make?

Senator DANFORTH. No, thank you, Mr. Chairman.

Senator FORD. What I would like to do, if we would, is to limit our questions to ten minutes, and then we will rotate and use the lights. Sometimes I get carried away and the red light will warn me that ten minutes is up.

Mr. McArtor, what can you tell us about the cause of the tragic accident in Dallas last month?

Mr. MCARTOR. Mr. Chairman, as you know and as indicated earlier, the NTSB has completed its field work but has not yet reached a determination of probable or contributing causes. The FAA supports them in that investigation.

One of the earlier revelations, though, has been the suspicion that the airplane was not properly configured for takeoff. This concerns us greatly.

It was a year ago that our industry was faced with this challenge. We have made a tremendous amount of progress. We have talked to the pilots in the system. We have developed cockpit resource management training program. We will have an advisory circular issued this fall. With respect to that I have personally briefed and been briefed and visited many of our airlines to encourage them with their cockpit crew programs, and we have seen a lot of measurable progress in this area.

The accident, though, a couple of weeks ago is a tragic punctuation point, that shows how much more still has to be done blending once again this procedural—the people, the equipment, and the procedures in our system, one integrating with the other, and backing up each other. We hope that we will learn some more once the captain of this aircraft is interviewed.

Senator FORD. Well, can you give us your personal judgment as to the cause of the tragedy?

Mr. MCARTOR. No, sir. I would not feel comfortable in trying to give a personal judgment. I do not have access to all of the facts that the NTSB has. Certainly we know, though, we must continue our efforts to improve crew coordination in the cockpit, and to try to develop effective and fail-safe means to back up what is the human frailty with warning systems or backup devices of some type.

Senator FORD. As in so many accidents, fire and smoke claimed many of the victims' lives, as they did in Dallas. What steps are being taken by FAA to minimize the potential for fire after an accident?

Mr. MCARTOR. This year, if I could break it down into several different categories—this year we placed particular emphasis and have formulated an industry committee to look at the cabin evacuation scenario. That is one area where we want to take a systems approach to cabin evacuation taking into account door distances, lighting, training of crews. It goes on and on, dozens of different things.

There is another area that we feel very concerned about, and that is the flammability standards of seat materials and interior materials. We have rules in progress at this time. We would like to think that some of these people who escaped this accident did so because the fire block materials on those seats. We saw pictures of molten metal that was ac-

tually on top of the seat cushions and the seat cushions had not ignited. So, we think that the seat cushions played a major role in keeping the fire away from that cabin area for at least a minute and a half while people got out.

Much needs to be done. I am disturbed, quite frankly, at some of the on-camera interviews with self-styled experts who would suggest that we are not doing enough on disconnect fuel lines. We have taken a very serious look at this. We continue to do so.

In civil aviation we have got to make sure that the cure is not worse than the problem. We are very, very concerned about disconnect fuel lines that might come apart as part of normal operation. The reliability of these systems, they are not as good as the very remote possibility of having the accident to start with. So, we have got to take a very careful look at these things, and I think the American public should know that we have an ongoing effort to try to improve the survivability of crashing and catastrophe.

Senator FORD. Are there any tools that Congress should give you to help you to address the cause of an accident or to increase your ability for preventive medicine? Anything Congress should do statutorily to give you additional authority?

Mr. MCARTOR. Well, I am very pleased, sir, at what I feel to be the very best working relationship in a long time with the NTSB. We have improved that relationship this year. I think we have a very good means in this country to reach a determination of a probable cause in an accident.

The NTSB provides us with recommendations, and we respond to those recommendations either by adopting them or by providing conclusive evidence as to why it is not necessary or not practical. So, I think we have a good means to determine the cause of accidents.

We have to keep pressure, though, on our continued research and development efforts, the efforts we have at CAMI and at our technical center to try to continue to look at seat survivability. As you know, we have standards for high G seats now, for flammability standards, and for the systems approach, as I mentioned, to cabin evacuation. So, I think if we continue the kinds of initiatives we have in place now, that we will be able to make very positive progress.

Senator FORD. So, you are saying to the committee, then, that as far as you are personally concerned, there is nothing additional that Congress should do as it relates to giving you authority or, "tools" to perform better at FAA?

Mr. MCARTOR. Well, actually anything that can help streamline the process of procurement and decision making assists us all in making this improvement in our system.

Senator FORD. So, you are saying that procurement is an area in which we can assist you?

Mr. MCARTOR. Research, development, procurement and the decision-making processes all would contribute to probably more rapid analysis and positive programs.

Senator FORD. When you say decision-making process, what do you mean by that? What does that encompass?

Mr. MCARTOR. Well, we have a very coordinated decision-making process right now.

Senator FORD. With whom?

Mr. MCARTOR. Both internally and with the Department of Transportation, and we are working with the department internally as well to try to streamline those decision processes.

I think much has happened this past year to assist us in that, and obviously much can still be done.

Senator FORD. Senator Stevens.

Senator STEVENS. I would be happy to yield.

Senator FORD. We will take them in the order as they come.

Senator STEVENS. Thank you.

Mr. McArtor, As one who survived a crash of a small jet, I am concerned with some of the reports that I have heard that the hatches in some of these recent crashes could not be opened from the inside by the passengers. Have you seen those reports?

Mr. MCARTOR. I have seen the comments, I believe, that you are referring to, sir. When you have an aircraft accident, you sometimes have jamming of exitways or emergency exits due to structural failure.

Senator STEVENS. That happened on ours, and thankfully there was no fire and we were able to be cut out with acetylene torches. But I have been reading these reports and wondering if there has been any research by the FAA, your people, concerning designing escape hatches so that if the outside perimeter was barred by structural failure in the crash, there would still be an inner escape hatch. That was the original design, as a matter of fact in the old aircraft, if you will recall, during World War II. But we seem to have lost that design.

Mr. MCARTOR. Well, I do not know that that actually provides any real value added to the hatch design. A great deal of improvement has been done in the emergency exit design and operation over the last several years. A good case in point is the large emergency exit for both—for the wide-body aircraft, DC-10's and 747's and also the mechanical mechanism itself for releasing and opening these emergency exits. You want to be able to make sure that the door itself, of course, has a fail-safe system for pressurization and then be able to be opened, though, where the door can either swing inward or outward with ease, even in light of a crash. I think we can be proud of the progress that has been made here, but you cannot predict all failure modes, of course, when you have a structural failure of an aircraft.

It was encouraging to notice one witness had pointed out in this last crash that she was able to open the emergency exit, saw fire on the outside, and was able to close that exit again and go to another emergency exit. That encourages us with the survivability, then, of the cabin system.

Senator STEVENS. I saw that, but I also saw the report that indicated some of the passengers may have expired from smoke because they could not open the hatch. Did you see that report?

Mr. MCARTOR. Yes, sir, I saw that, and I am not aware of whether that escape hatch had failed due to the impact itself or whether there was something wrong with that hatch. We will look forward to the NTSB helping us out there. Of course, it was complicated by literally thousands of gallons of kerosine igniting outside the airplane as well.

Senator STEVENS. There was also an indication that passengers did not know where the fire extinguishers were in the aircraft. Did you see that comment?

Mr. MCARTOR. I have not seen that comment, no, sir.

Senator STEVENS. And, having ridden, as we all have so often, in aircraft, I am aware that the flight attendants indicate where the exits are. I am not sure that most passengers would know where the fire extinguishers are. Do you think that there is adequate provision for passengers to be made aware of the location of the fire extinguishers, and to be taught how to use them in the event of a crash?

Mr. MCARTOR. Well, it is hard to predict as to whether they would know how to use them. Most of the fire extinguishers—we would prefer to have the crew, of course, the cabin crew operate those, but you are absolutely correct. That information is available to the passenger, and I think we all become a little complacent with respect to paying attention to the safety briefing by the cabin crew and looking at the card in the seat pocket in front of us, and perhaps passengers will take a renewed interest in those things now.

Senator STEVENS. On another subject briefly, I cannot tell you as I said in my opening comments how really—and I do not use the word often—how excited Alaskans are that you are moving forward with the tiltroto. In a state that maintains some, well, over 100 airports, the possibility that we might be able to reduce the amount of cement and macadam and gravel we maintain for communication to small villages and small cities is welcome news. The savings involved in terms of the infrastructure needed to handle passengers in states like ours is just going to be tremendous. And the federal government supports a great deal of that. I encourage you to proceed as rapidly as possible to see if we can certify the tiltrotor and put those aircraft in operation in the transportation of passengers between communities that are less than 200-250 miles apart. I think it would be just a fantastic innovation in the American system of transportation. And it would substantially reduce the cost to the taxpayers of maintaining the system. Thank you very much, Mr. Chairman.

Senator FORD. Thank you, Senator Stevens.

Senator Kassebaum.

Senator KASSEBAUM. Mr. McArtor, I would like to ask some questions about the national airspace system plann because I think that is really the key to solving capacity problems in the next decade.

A little over a month ago the contract for the FAA's advanced automation system was awarded to a consortium that was headed by IBM over one that was headed by Hughes. It now appears there is a real chance that that contract award may be the subject of extensive litigation. I am wondering if you could answer a couple of questions concerning that development.

First, was the decision to award the AAS contract—and I realize this is principally a DOT decision and not FAA—based principally on price or were there other considerations?

Mr. McArtor. Well, you are correct, Senator Kassebaum, that the source selection official was within the Department of Transportation. We do the program management, of course, and we set the evaluation criteria and rate the proposals with respect to technical merit, price and management capability. We rate those and then we provide that information to the source selection official and then the decision is made, and then you award the contract. Hopefully, this challenge to the award of the contract will be resolved on October 7th with the decision of the administrative law judge.

It would be most unfortunate for this country if there was a prolonged challenge that would cost us both dearly in time and money because after all, it is the product that we need in the airspace, and we would like to get on with it.

Senator Kassebaum. Well, that was the second part of the question because I agree with you that if there is prolonged litigation, it would obviously set back the implementation of the AAS system.

Mr. McArtor. It is more than just the implementation of AAS. It is truly the cornerstone of the entire NAS plan, so a delay on that program, as highly integrated as you are well aware of the program itself, several projects need to interface with AAS, so it would be a delay in the entire NAS plan implementation and substantial cost as well to the taxpayers.

We are very hopeful that this would be resolved and get behind us, and we can proceed with the AAS program.

Senator Kassebaum. Well, there has been slippage. There was slippage prior to this and now perhaps extensive slippage because of this. If you do not get the system delivered on schedule, and you have indicated very serious consequences for the system, will traffic increases be so great that by the year 2000 the system will be overwhelmed?

Mr. McArtor. Yes, ma'am. We have, of course, a plan that tells you how do you get there from here. We are not just waiting for AAS to bail us out. So we are adding digital electronics to our ARCH system, and we have what we call a transition plan that takes us from our current technology into the new technology.

There are limits to that. There are limits both in terms of modernization and maintainability and capacity of our current system. There is nothing particularly magic about the year 2000. However, I think we would all understand that without this added automation program, without the additional computer capacity in our system, that we will not be able to handle capacity in the future, whether that happens to be the year 2000 or not.

Senator Kassebaum. You were once with the Defense Department in earlier years and are familiar with the problems of contract delays and requirements. I would like to ask about examples such as the air route surveillance radar, and the airport surveillance radar, and the central weather processor. Many of these various systems are one to two to

three years behind schedule. In your opinion, are contractor-related delays in these programs more the result of engineering problems encountered by government contractors or new technology requirements being imposed by the government?

Mr. McArtor. I am tempted to say all of the above and then some. The schedule for the NAS plan was started off with a very aggressive schedule. It took two or three years for it to settle into a more realistic schedule. If you want to look at that as a delay, I suppose you could consider it delay. I personally think it was just adopting a more realistic integration schedule, implementation schedule.

During the course of this year, we did find that we need to be better at program management and program contracts. That is why we established our new organization that provides the management control, the check and balance on the NAS plan organization and program management to make sure that we are getting the bang for the buck, that we are meeting our expectations, that we are not unnecessarily complicating our own life with change orders which oftentimes add a lot of time and expense to these programs.

We need to more professionally manage our contracts in the FAA and in the government as a whole, I think. So, I think there are some vendor problems that we have had—MLS is a good example of that.

We have also had some contract management problems. So I think there is a lot of room for improvement, and that is one of the reasons that we organized ourselves this year to provide a framework for that improvement.

Senator Kassebaum. You mentioned the MLS. That was going to be my next question because it is sort of everyone's favorite program in one way or another. But in the years that we have been debating MLS in this committee, one of the things that has concerned most of us is that as slippage has occurred, there has not been enough effort to maintain ILS. I wonder if you would comment on what you see ahead for the MLS program.

Mr. McArtor. At the risk of being redundant from what I we talked about last fall, to begin with, the FAA packaged the MLS incorrectly. We packaged it in such a way that you either had to be for ILS or MLS, but you could not be for both. And that is not the case. They are both very complementary; they ought to be in the system at the same time. For some period of time, ILS has limitations to it. It has frequency congestion problems. The signal becomes unstable when you have new buildings going up around the operating environment. We have long overlapping ILS approaches in our major metropolitan areas. New York is a great example.

We need to have an alternative to ILS. At the same time, it is not because ILS fails across the system, it is because we need a better precision approach for the next century. So, we have to continue to support ILS, we have to continue to install it where necessary, but we have got to provide a decade of transition in the 1990's where we begin to configure our airports with more and more MLS so that the carriers can make their avionics choices during that decade and configure their fleets.

MLS has a tremendous capacity impact to it. In the New York area alone we held a conference and were able to identify that the addition of MLS in the greater New York area for the three major airports there, adds 15 to 20 percent capacity. That is half an airport up there or the same equivalent of putting Washington National in the New York area. Without pouring one cubic yard of concrete we get that kind of capacity. That is because we can have circling approaches as opposed to long overlapping intersections of ILS approach courses.

Now, there are some things that we need to do better, though. We need to demonstrate the category II and category III capability of MLS, and we need to demonstrate the three-dimensional approach that I just mentioned, and we are prepared to do that in this next fiscal year.

Senator KASSEBAUM. If I could just follow up on that for a minute, is it not true that some of the noise restrictions now under discussion could be inconsistent with the types of approaches which MLS would permit?

Mr. MCARTOR. I guess it depends on whether you live currently under the ILS approach corridor and therefore would be saved by MLS or whether you would be under a new approach area. It gives us, certainly, greater flexibility to manage the noise environment if we have the flexibility of running the three-dimensional or curved approach. So, we are anxious to get on with that feature of it.

Senator KASSEBAUM. But given some of the proposed noise restrictions, would they be allowed to fly a curved approach?

Mr. MCARTOR. Oh, yes. It should not have an impact.

Senator KASSEBAUM. Which is a major benefit of the MLS system, is that not correct?

Mr. MCARTOR. The MLS would be a more flexible approach, technology precision approach, technology allowing us to bring airplanes in from different areas. So, if anything, we might spread the noise from the approach area, but the noise problem really exists within a very narrow footprint of the airport itself, so once you roll out on final where you really a problem with noise, regardless of how you get there, ILS or MLS does not make a whole lot of difference.

Senator KASSEBAUM. Thank you, Mr. Chairman.

Senator FORD. Thank you, Senator Kassebaum.

Senator Danforth.

Senator DANFORTH. Thank you, Mr. Chairman.

Mr. McArtor, in the Delta accident 14 people were killed. I understand that another person who was involved just passed away. That brings the total to 14. But there were, I think, 108 people on that plane, and it is my understanding that the plane had been retrofitted with a floor lighting system and with flame retardant seats. Do you attribute the fact that so many lives were saved in that accident to either of those retrofittings?

Mr. MCARTOR. Absolutely, I am personally convinced that the fire block material of the seats contributed greatly to keeping the fire from probably getting through the cabin and allowing them enough time to get out. The people who were trapped or who were killed, it is hard to

say whether they were incapacitated because of the impact or the crash itself or whether it was fire or smoke after impact. Hopefully the NTSB will be able to give us some idea on that.

Senator DANFORTH. When did the retrofitting occur?

Mr. MCARTOR. For an aircraft like that, it was well over a year ago for fire block seats. All commercial aircraft now—all the ticket-buying public is protected by fire block seat cushions and if any remain right now, those are the corporate jet-styled aircraft—airplanes that are still in the conversion process. But this rule has been out and the fleets are being configured.

Senator DANFORTH. Does the FAA have anything else in mind with respect to——

Mr. MCARTOR. Oh, very definitely. We have a big test program up at our Technical Center in Atlantic City. It is hangar-sized and we can conduct all kinds of tests in there. We are most concerned with fire that can be within the wall structure, the fuselage structure between the liner and the skin where it is hard to get at. We are particularly concerned with fires that might start in a cargo compartment and the flammability standards of the cargo compartment and then the seat backs and then the overhead storage bins. We are continuing research there and have rules affecting all of those, so we continue to be concerned with flammability of materials used in aircraft and adequate extinguishing systems and warning systems to alert the crew to potential fire hazards.

So there is a very aggressive program under way right now. We continue to pursue that, and we work very hard with our international counterparts and with NAS as well on these standards.

Senator DANFORTH. Last year we passed the Aviation Reauthorization Bill, and the idea of that bill was to increase capacity and hopefully increase safety as well, improve runways, improve and add to facilities and equipment, and increase the number of air traffic controllers. Is the capacity problem, in your view, pretty well settled now?

Mr. MCARTOR. Oh, not at all.

Senator DANFORTH. Can we rest on our laurels and relax or is there something else we should be doing?

Mr. MCARTOR. I think we can feel comfortable that we have made a real honest effort to try to eliminate the capacity problem this year, and we have begun several initiatives to attack the capacity problem. But if there is one area that remains open-ended, it is capacity. Capacity and access to airports. We have to continue very aggressive programs to modernize our existing airport facilities to improve and expand our existing airports and to build new airports. I think we have a lot of work to be done there.

One of the thing I would like to see the Congress address is taking a look at the AIP formula itself and try to maybe lower the ceiling on the enplanement apportionments so that we can have more monies available for discretionary or capacity-enhancing projects using the same overall sized pot of money for AIP programs. Together, the FAA, industry, and the Congress, need to also look at new airport projects and

whether we have an adequate system to actually build the new projects, the new Denvers or Austins, and the important airports that need to be built, brand new ones.

We look forward to working with this committee as well on trying to figure out those answers.

Senator DANFORTH. How about the additional air traffic controllers? That was to be 900, is that correct?

Mr. MCARTOR. Well, I am happy to report that we have exceeded that "magic" prestrike level of the controller work force. Maybe now we can turn our attention to the future as opposed to measuring ourselves against the standard of 1981. But having said that, numbers are only half the answer. We are going to continue to aggressively hire more air traffic controllers, but it is not from a shortage. It is to get ready for the future and be able to provide the flexibility to move air traffic controllers within our system as we do. But we have to have better ways to recruit and retain. We have to have our pay systems analyzed, our staffing standards. Our training processes have to be improved, as I briefed earlier. So, we have a lot of work to do on the air traffic control work force. But I am happy to say that we have made tremendous progress in that regard this year.

Senator DANFORTH. Is overtime a problem?

Mr. MCARTOR. The answer to that is both yes and no because we have to recognize that overtime—there is good overtime and bad overtime. As an example, we have an awful lot of staffing that has to go with, say, a pilot certificate revocation issue where we have air traffic controllers giving depositions or appearing in court and every traffic controller along the line of flight gets called in to testify. It is things like that, the administrative support more than just controlling aircraft. A lot of that is done on an overtime basis. A lot of our training or administrative detail is done with overtime. That is what I consider to be good overtime. That does not bother me.

The overtime that bothers me is overtime as a result of low staffing and our inability to attract controllers to a hard-to-recruit-to area. I am happy to say that we have a pay demonstration project that we will be conducting this year, experimenting with cost-of-living allowances. We have created a super tower status for our major air traffic control towers to make sure that our pay scales are, at least under our current authority, are as good as we can get. But, yes, we have some overtime problems in our system, and they seem to be chronic to certain facilities.

Senator DANFORTH. Mr. McArtor, almost a year ago the Senate passed a bill with an amendment that was added onto the bill by a vote of 83 to 7 to provide for testing, drug and alcohol testing for safety-related transportation employees. Airline pilots, locomotive engineers, people who are involved in safety would be subject to both alcohol and drug testing. Despite the fact that the amendment was added to the bill by such an overwhelming margin and despite the fact that there has been a nonbinding vote of 377 to 27 in the House, attempting to weigh in if not instruct their conferees on this bill, still nothing has been done.

The drug issue is one that is before Congress now. We do have some hope of enacting the provision that we agreed to in the Senate a year ago this month—a year ago next month, I guess. Do you have a judgment as to the advisability of passing legislation that would provide for mandatory random testing as well as testing for cause, testing post-accident and testing before employment and on a periodic basis?

Mr. McARTOR. Yes, sir. But my perspective is much different from yours. From my perspective this year much has been done, and we are literally on the threshold of a final rule that addresses random drug testing in our transportation systems including aviation. It has been, as you well know, a difficult issue to address within our industry, and we wanted to make sure we had a fair comment period.

We held public hearings to get comments from our industry. We have taken a look at the statistics that have been presented to us, the types of testing, the probability of false positives and false negatives, and we believe that we have a very good final rule that our industry can live with and that our public will proud of. So I see a different perspective. I see that much has been done, but the rule is just about ready to be issued is my understanding.

Senator DANFORTH. What would you say in defense of such a program? Why is it important to have testing?

Mr. McARTOR. I think from the flying public's perspective you can approach random test programs one of two ways. One is to create a deterrent and a level of confidence to the public that your transportation system is drug-free. The other is to know a specific level of problem that you are trying to reduce, whether you are trying to take a 10 percent problem down to a 1 percent or a 1 percent to a 1/100 of a percent.

The former is what I think we are doing in aviation. I do not think we have to know precisely what the problem is within the aviation community to have a random test program. I believe the public deserves to have confidence that a random test program is in place and that there is an adequate deterrent and that we can keep our safety-related positions drug-free. So, I fully support a random test program.

Now, having said that, we have to look at the extraordinary responsibility placed on management to administer such a program. You have to be sensitive to human rights and dignity. You have to ensure as much as you humanly possibly can that your test results are accurate and there is no human error built into that. And you have to have an adequate rehabilitation program for those who voluntarily come forward.

Senator DANFORTH. All of that can be done, of course, and all of that is done in the legislation, as a matter of fact.

Mr. McARTOR. Yes, sir.

Senator DANFORTH. And I assume it is done in any proposed rule.

Mr. McARTOR. Yes, sir.

Senator DANFORTH. The accident in Durango, Colorado, early this year, was it? That did involve, did it not, cocaine use?

Mr. MCARTOR. Well, the post-accident tests found traces of cocaine in, I believe, the pilot's system. We can only speculate as to whether that had any contribution to the accident itself, but it is obviously very alarming to us.

Senator DANFORTH. Thank you.

Senator FORD. Senator McCain. Do you have an opening statement?

Senator MCCAIN. I do not, Mr. Chairman.

Welcome back, Mr. McArtor. I would like to make a couple of comments, if I could. One is that I appreciate very much your assistance on the implementation of the regulations concerning overflights of the Grand Canyon and the flight-free zones. I appreciate your personal involvement in that issue. I know it was a very difficult one. I understand that the air tour operators have requested a 60-day or more delay in implementation of those regulations. I hope that you will look with great skepticism on that.

These regulations are not new. They were discussed with the air tour operators as long as two years ago. So, I hope that you will take that into consideration when you address any request for a further delay in the implementation of those regulations.

Second of all, I would like to also commend you on the FAA's efforts to include the general aviation community in the decision-making process for this Phoenix Sky Harbor TCA proposal. The Arizona airspace utilization committee has recently submitted their proposal for your consideration and I urge you to give this recommendation a reconsideration. It is a committee that was appointed by the governor of the state and encompasses many aspects of the aviation community including general and business aviation and representatives from local governments. I believe their active participation is very important in this process, and I appreciate your consideration of their proposals. Phoenix is a unique area in that we have so much military airspace utilization, as you know, which makes it far more crowded airspace than one would surmise from looking at a map.

Third of all, air shows. If there is one area that you are familiar with, Mr. McArtor, it is the conduct of air shows. It has been stated that the loss of life that ensued at the recent tragedy over in Germany would not have occurred if the FAA regulations in effect in the United States during air shows had been applicable. Is that true?

Mr. MCARTOR. I think it would be safe to say that the maneuver as flown and the position of that maneuver would not have been allowed using our current criteria for air shows, Senator. Yes, by definition, of course, the accident would not have happened because the crossover maneuver is something that would not have been approved as part of our maneuvers package, nor the positioning of it.

Senator MCCAIN. Should not that mean that for any air show that takes place over a U.S. or joint use space in Europe, we should apply the same rules and regulations that we do for air shows here in the United States?

Mr. McARTOR. Well, we feel very comfortable with our air show, rules and procedures and the way we monitor, FAA monitors the air shows. We had a complete review of this last fall as a matter of fact. It made several modifications to our own handbook. As a matter of fact, we completely rewrote the handbook, so we feel very comfortable with the way that we professionally manage air shows, and we are certainly willing to share that with other armed services or other countries that would like to take benefit of the work that we have done.

Senator McCAIN. Well, my point is that if it is a U.S. air base overseas, should not we try to implement the same FAA rules that apply for an air show in the United States?

Mr. McARTOR. I can speak to you as an aviator, but naturally the FAA does not have jurisdiction over those air bases. My opinion would be just that as a private citizen or an aviator.

Senator McCAIN. As a personal opinion, we should apply the same rules?

Mr. McARTOR. I think it would be prudent, yes, sir.

Senator McCAIN. Thank you. Last time you were here you and I talked about a problem that continues, and that concerns pilots who are less and less experienced in the cockpit, particularly in feeder airlines, as well as all our major airlines. A case was made in one of the accidents that both pilot and co-pilot had very little actual experience, and you told me at that time that you were going to address that issue.

Can you tell us what efforts you have made in that area?

Mr. McARTOR. Yes, sir. We are almost a complete year into a very thorough analysis of our certification rules and regulations regarding pilot competency and pilot training and a study of what makes a competent pilot. We expect to have some advice or circulars on that this fall, and perhaps some rewrite of regulations that have been on the books for some 30 years that I think could use some modernization in that regard. We have also worked very hard with the commuter industry to allow and encourage the use of simulators for training of commuter pilots.

If you recall, following the Denver accident, we did issue a directive to the airlines about who should have the controls in inclement weather with respect to the experience of the first officer. It is the first time we have done something like that. So, we have made a great deal of progress, and I think it will probably be later in the fall, though, before we will see some of the results actually put on paper and implemented in the industry.

Senator McCAIN. As a member of the Armed Services Committee as well as this committee, an issue of great concern to us has been the cyclical but extremely unpleasant aspect of renewed exodus of military pilots from the military. In fact, it is my understanding that this year more pilots will be hired by commercial airlines than the combined pilot training output of our military training. An additional concern is the fact that the cost of training pilots continues to increase geometrically. One of our Air Force generals testified before the Armed Services Committee that it costs $5 million now to train a fully qualified C-141 MAC pilot who is capable of performing certain missions.

We are having to look at it from the Armed Services' standpoint of increased pilot bonuses and other efforts to retain military aviators. I do not think you can look at it just from that viewpoint. I think there has got to be some kind of coordination between people such as yourselves and the military and the Congress so that we look at other ways of training pilots. We need to look at ways of somehow anticipating these problems which all of a sudden seem to come upon us even though, as I said, you and I have been through this several times in the last 20 or 30 years.

I hope that you will first give us your thoughts and second of all ask some people to come up with some ideas such as alternate pilot training. We cannot get all of our civil aviation pilots from the military, much as we might like to, and frankly, if it affects national security to the degree that some think it might, we may have to look at some kind of prohibitions.

One is to perhaps extend the tour length of our pilot graduates. But I also hope that you have some ideas along the lines of alternate pilot training.

Mr. MCARTOR. Yes, sir. For this entire year we have been working very closely with the ranking officers in the armed services on joint civil and military issues. There really are three before us right now that are really major: joint use airports, special use airspace, and the pilot training-pilot retention issue because that really is a joint civil-military issue as well. In fact, I have hired a special assistant, retired Colonel Ron Webb, to help me address these specific joint civil-military issues.

The pilot training-pilot retention problem that faces the military is not just a military problem. We have a pilot shortage on the horizon for our civil side as well. That is what we have got to preserve, civil aviation, our general aviation. We have got to give very close attention to the *ab initio* training programs that are coming our of our universities and ask is that enough? That is a part of this study that I talked about.

We have got to try to figure out some cooperative efforts with the military to have somebody spend more time in the cockpit and still be able, if they wish to as a career, join the commercial pilot sector without surrendering so much seniority time perhaps.

I am very encouraged by the work that General Dwayne Cassidy and his staff are doing. It is very creative thinking, as a matter of fact.

So, you have identified a most serious issue with respect to aviation, and I am not sure we have all the answers to it just yet. However, it is a part of literally all these studies that we are doing on pilot training, pilot performance and the retention problem in the Air Force.

Senator MCCAIN. Thank you. Our time has expired. I just would finally comment that Colonel Borman who was before this committee—you might remember, Mr. Chairman.

Senator FORD. Several times.

Senator MCCAIN. On several occasions stated to us—I believe it was last year—that now that he had had the opportunity to return to general aviation which was his first love, he noticed with great alarm

and concern that availability of general aviation for young Americans had basically disappeared.

Senator FORD. Frank changed his mind on several things after he got out into the real world.

Senator MCCAIN. I think he was correct in that observation because we have gotten our young pilots for most of the century from people that hung around the airports and bummed rides. And unfortunately that does not seem to be possible any more. Thank you, Mr. Chairman. Thank you, Mr. McArtor.

Senator FORD. Senator Breaux.

Senator BREAUX. Thank you very much, Mr. Chairman. I do not know whether to complain to my chairman or complain to the FAA, but we are sitting up so high up here without oxygen that we are getting nosebleeds and going through decompression up here.

Senator FORD. As long as we do not get over 70,000 feet, you will survive.

Senator BREAUX. Thank you, Mr. McArtor, for being here. We appreciate it.

I would like to get into a couple of areas. Number one is the installation schedule for the Doppler radar systems. I note from press accounts that you have, I think, 16 large airports that will receive the first permanent Doppler radar systems in the nation. I note that Washington National is first on the list for the Doppler system being used to look at and detect windshears associated with thunderstorms, and Washington National is first on the list to get a Doppler system.

The city of New Orleans that I have the privilege of representing is, I think, 14th out of the 16. New Orleans, of course, was the site of a very unfortunate Pan Am disaster that killed I think 140-some odd people, 145 people on the plane and nine people on the ground died. And pretty much it was found that windshear caused the crash of that plane.

So I am trying to figure out how the priority system was arranged. I asked the National Weather Service to give me some information on the number of thunderstorms around the airports that are on the list, and I found that the average number of thunderstorm days per year at Washington National is 29.7. New Orleans is 68.6.

The average number of actual thunderstorms actually recorded per year at Washington National is 38, the city of New Orleans is 93.

The priority seems to be based, coming from the FAA, not on the number of thunderstorms but the number of people departing the airport, which I find to be most unusual, because the number of people leaving an airport has nothing to do with causing wind shear.

Wind shears are caused by thunderstorms. New Orleans has by far the highest, it is practically last on the list. The city that has one of the fewest is first on the list. Can you give me some rational for that reasoning from FAA?

Mr. MCARTOR. Yes, sir. I think the priority for Washington National came from you and your colleagues here on placing naming.

Senator BREAUX. I am sorry?

Mr. MCARTOR. I believe that the Congress has place named Washington as first on that list.

Senator BREAUX. This Committee has done that?

Mr. MCARTOR. Well, the Congress has, sir.

Senator FORD. It must be on Appropriations, because we did not put anything through here like that.

Mr. MCARTOR. When I mentioned you and your colleagues——

Senator FORD. It is typical though, they blame Congress for everything. So it is all right.

Mr. MCARTOR. No, sir, we certainly appreciate all the assistance we do get from Congress on prioritizing the spending of our F&E monies.

But in seriousness, Senator, I am not personally aware of the priority system with respect to the Doppler weather radar. I would be more than happy to take a personal interest in that and find out what it is and get back to you.

If memory serves me correctly, though, that the installation schedule is a fairly compressed schedule. So the significance of being either first or last on that list is probably not as big a timeframe as you might in your mind's eye imagine.

Senator BREAUX. It is a minimum of four years, according to press accounts that I have seen. And the thing that disturbs me——

Mr. MCARTOR. I do not believe that is correct, sir.

Senator BREAUX. I said according to press reports. That is an accurate statement of what the press reports are saying, based on some discussion with somebody at FAA. Now, whether they are correct or not is not certain.

One of the things that they said is Federal administrators say the installation of the Doppler radar in New Orleans will not happen soon for two reasons. And first they blame the amount of time it will take to award a contract, produce the equipment, acquire land at airports if necessary and install the tower antennae and computer. I would suggest that that has to be done at every airport, not just at New Orleans.

The second reason they gave is that even though New Orleans has a lot of thunderstorms, which can give birth to wind shear, the city has been assigned less than a priority because the airport is relatively small.

The size of the airport does not cause the wind shear. The size of the number of disembarkments does not cause the thunderstorms. It would seem that in establishing where it is needed most you look at an airport of reasonable size, which of course New Orleans would be, and the number of frequency of thunderstorms in the area.

And I would like, since I am not, you are not able to give me a real response on how that priority was arranged other than to indicate that Congress indicated that Washington National should be first, which I find extremely interesting, to try and go back and take a look at this.

I mean, I think it is ridiculous, and that is the nicest word I can use, to suggest that the city that has the greatest number of thunderstorms and wind shear potential would be last on the list.

Mr. MCARTOR. Excuse me, Senator. New Orleans is to have their system within two years, and it has benefit right now of the new low-level wind shear alert system, which not all airports have.

But I would suspect that the prioritization is probably a balance. The risk equation, of course, is a combination of the frequency of the thunderstorm environment and the number of enplanements or the air traffic at the airport.

Senator BREAUX. Why does the number of passengers, is 145 lives less important than the potential of a larger number leaving?

Why is the size, if it is a reasonably large airport, why should the number of passengers have anything to do with the potential for wind shear problems?

Mr. MCARTOR. Well, the number of operations out of an airport contributes, of course, to the statistical probability of encountering wind shear. But New Orleans——

Senator BREAUX. It does not. It has nothing to do with wind shear.

If you have an area that has no thunderstorms in a year but millions of passengers leaving every year, the risk potential in that area has got to be extremely low. Yet the risk of an airport that has maybe five flights a day that has thunderstorms every day, I would rather go out of the first airport than the second airport. Would you not agree with that?

Mr. MCARTOR. Well, the risk of wind shear is remote to start with. But New Orleans has been rated 17 out of 100 airports, so I really do not think that it has been rated as a low priority with the establishment of the Doppler weather radar system.

Senator BREAUX. I would like some response in writing or send somebody to talk with me, because of the first 16 our understanding is that New Orleans is 14th on the list.

[The following information was subsequently received for the record:]

The Doppler weather radar priority list was established to maximize potential lives saved. This was done by using a combination of thunderstorm count to determine frequency of wind shear conditions, and passenger count to determine air traffic load and potential lives saved per accident prevented.

The only exception to the above criteria is the first installation at Andrews Air Force Base. This site was selected after Andrews encountered a severe wind shear event within six minutes of the arrival of Air Force One. A Doppler weather radar will protect both national and world leaders arriving and departing Andrews. Incidental to that primary purpose, it will also be available to provide coverage over a major hub area including Washington National Airport.

The installation at Andrews generally will not adversely impact the installation schedule at other locations. Beginning with the third delivery, one system will be installed each month until the seventeenth system is installed.

Senator BREAUX. Washington National for some reason is first of the list, and I do not understand that, when it comes to looking at the potential problem.

Let me ask you another question that I have always wondered about. I have always stuck my head in cabins in planes, because I love to talk to pilots until they throw me out, which is what they should do.

But I ask them in figuring out the weight of a plane before takeoff, when calculating to know the number of fuel, that is a definite, to know the number of passengers, that is a definite, to know the number of passengers, that is a definite, although they do not know the weight of the passengers and they estimate the amount of luggage weight.

That is an extremely important decision, the weight of the plane. Temperature at takeoff, the length of the runway, and the weight of the plane are three factors that are extremely important, I think you would agree, with regard to takeoff.

Why do we not have on an airport somewhere before, on the taxiway for instance, some type of a scale that when the plane fully loaded goes out to their takeoff position the plane can roll over that scale and come up with an accurate assessment of the weight?

We do that with trucks. Eighteen-wheelers run down the highway and we do not let them get on the highway unless we actually weigh them at all the darn little scales that we have along the interstate highway so they do not break the concrete.

Why would it not be simple to have the FAA, or somebody, have a scale that a plane would stop on for 30 seconds, have a printout of the weight of the plane to tell that pilot accurately, without having to guesstimate what the weight of the plane is, to see whether he should go back and offload passengers or offload fuel or find a longer runway?

Mr. McARTOR. Well, sir, having come from the cargo business prior to this job, I am very, very familiar with both the need and the difficulty in a dynamic weight and balance kind of a system.

I might also say that, if carefully done, the weight and balance is not as much guesswork as you might think it is with respect to a commercial aircraft. The containers of freight are weighed individually and positioned within the airplane according to optimum CG, center of gravity.

Senator BREAUX. Is that done on planes that do not have containerized cargo?

Mr. McARTOR. If it is not containerized, then the estimates are made. But the systems for estimation are really pretty good.

In fact, even the weight of the passenger and their hand luggage is determined by that particular route structure, whether it is a business route or a vacation route or one thing or another, they have different estimates.

Senator BREAUX. But all of that is an estimate as compared to how—would it not be simple to have a scale that the plane would run over?

Mr. McARTOR. Well, although weight and balance is critical, I do not think we have an unacceptable error in the system as it exists right now.

But to weigh an airplane with a scale in the tarmac is not as easy as you first might think it is, because you do need to have precise measurements, and it has to be able to withstand the elements of one type or another.

So, I mean, your point is well taken, but I do not know that we would gain that much value added——

Senator BREAUX. Has that ever been considered by anybody at FAA that you know of? I mean, we weigh trucks.

Mr. MCARTOR. In the cargo business we do it all the time.

Senator BREAUX. To say that it is difficult, I mean we cannot weigh an airplane when we can weigh a big truck, we weigh them by the thousands.

Mr. MCARTOR. If you will give me some time to do a little industry search on that, I will get a paper back to you, sir.

[The following information was subsequently received for the record:]

Prior to receiving an airworthiness certificate from the FAA, each aircraft must be weighed, since each model aircraft may be equipped differently when used in commercial service. Following certification, the aircraft must again be weighed every three years. In addition, if an aircraft is modified or if equipment is removed or installed after certification, the aircraft must be reweighed.

The average weights used by the aviation industry to calculate weight and balance were designed through scientific analysis and polling surveys of the traveling public. Airline passengers are assigned an average weight which is calculated on a number of factors, including geographic location, type of travel, and time of year. In addition, nonstandard passenger weights have been developed for military charter flights and the transportation of college and professional football teams. This approach works well when properly utilized, and the FAA needs to continue to stress weight and balance considerations to the aviation community.

As an alternative to using the current approach to calculating weight and balance, a requirement to weigh aircraft on scales would not appear to be practicable. For one thing, weighing an aircraft on a ramp or taxiway or near the end of a runway could pose a safety hazard with air and ground traffic and could contribute to air traffic delays. In addition, it would be very difficult to maintain and calibrate the scales in an open environment such as a taxiway. Aircraft have to be weighed in an enclosed area due to the size of the wing (airfoil). Even a light breeze would cause an inaccurate weight reading by lessening the weight of the airfoil. Another reason for a closed environment to weigh aircraft is the necessity for the aircraft to be level during weighing. Taxiways and ramp areas are not always level.

As another approach, airframe manufacturers have also considered the feasibility of mounting load sensors on the landing gear struts. However, this, too, has not proven feasible due to the problems of wind and a level weighing environment which make it impracticable to maintain the integrity of such a system.

Senator BREAUX. My time has expired.

Senator FORD. Do you want a little more?

Senator BREAUX. I have just a couple other questions. The other thing I have had complaints from is a number of general aviation officers, and they always blame the FAA—then when I leave they probably blame me—saying that they now have to, at these small general aviation facilities, have to escort passengers to the airplane for departure.

Now, I am talking about some small tiny general aviation facilities that are really complaining that, you know, terrorists cannot even find the airport.

I mean, we are not talking about an airport that has a lot of traffic or activity, and the guy has to keep somebody at the airport at 10 or 11 o'clock at night just to escort somebody out to catch their little private plane to depart. That is an unbelievable burden in some of these small airports, and what we are getting in return is not justified.

Have you had complaints about that? Or is that something that is beyond question?

Mr. MCARTOR. That is new to me. But that particular complaint, we certainly try to balance our security programs though against probable security threats and try to inconvenience people as little as possible in the process.

Senator BREAUX. Do you know if it is an FAA requirement now that there be general aviation personnel stationed at general aviation facilities to escort people out to planes at all times during departures?

Mr. MCARTOR. I will see if I can get a better answer for you on this.

[The following information was subsequently received for the record:]

In recognition of the fact that employees of airports, airport tenants and contractors, who have access to the restricted areas of airports, are in positions where their actions can have a critical impact on the safety and security of the traveling public, security programs of airport operators subject to Part 107 of the Federal Aviation Regulations were amended in November 1985 to require that background checks be conducted on persons who require unescorted access to airport secured areas. Persons not having such background checks are required to be escorted when entering airport secured areas. Typically, since pilots who use general aviation facilities are not employed full time at the airport, they have not been subjected to background checks. They would, therefore, require an escort when entering airport secured areas. However, it should be noted that airports which serve general aviation traffic exclusively are not subject to Part 107 and the associated escort requirements. Further, the escort requirements may not apply at airports where the general aviation operations area is physically separated from the air carrier operations area.

Senator BREAUX. The people I have talked to said they have got communications from the FAA putting in the requirement, and they just screaming about it.

Mr. MCARTOR. If this is at an airport that has a sterile area, commercial operations in what we call a sterile area, we very definitely would insist that people with badges have to escort unbadged people.

Senator BREAUX. No, the ones that——

Mr. MCARTOR. But if you are talking about a small county airport, I am not sure about that requirement at all.

Senator BREAUX. If it is a general aviation facility located on the opposite end of a commercial airport, would that be a situation where you would require that general aviation facility to also have that?

Mr. MCARTOR. That could very well be. We guard very jealously access to flight line facilities, very, very carefully.

And we do not want one person entering one side of the airport and then be able to traverse to the other side, even though it is a long distance. But if we have any rule that seems to have gone a little outside of bounds of reasonableness, I would be more than happy to take a look at that with you.

But I would like to get some more specifics from you or your staff as to the airports in question.

Senator BREAUX. Thank you, Mr. Chairman.

Senator FORD. Thank you, Senator. Let me follow up this security question just a little bit, if I may, Mr. McArtor, about escorting passengers from general aviation or whatever it might be.

We have got a security door rule that is turning hair gray. And on August 8th we, several of us, sent Secretary Burnley a letter expressing concern with certain aspects of FAA's NPRM on airport security, specifically on control of access to secured areas.

We have not received a reply. I realize that you do not answer the Secretary's mail, it is probably bucked up to you and you draft it and send it back to him. But do you agree that we need airport access control systems that are compatible and that can be installed under a realistic schedule and that we can consider reliable?

Mr. McARTOR. With regard to compatibility, sir, the FAA does not have a requirement for airport compatibility.

I can certainly see among the user community, either a given airline or say a series of airports like the New York-New Jersey Port Authority that would operate more than one airport might wish to have compatible security systems.

Some of the industry may wish to band together to develop compatible systems, if nothing else to try to drive unit costs down.

But I think it is safe to say that this rule on airport security is one of the highest priorities of the Office of the Secretary, and it is not likely, I think, that we will see any delay in the implementation of a final rule.

But I think the comments received will be reflected in the final rule, and very definitely a reasonable implementation schedule——

Senator FORD. Well, how far down do these security doors go as far as size of airports are concerned?

Mr. McARTOR. Well, that is one of the things that I think is being addressed in the final rule is the small airport. Is there an equivalence of the computerized security program that we can give credit for? And I believe that that is going to be addressed in the final rule.

There has to be some cutoff point for security access technologies being introduced at small airports. I think we will see a reasonable rule.

Senator FORD. I am just thinking about my small airport that has two commuter airlines, and we will have four or five flights a day.

I guess the lobby is not much larger than this room, but large enough. I counted the other day, and we have nine doors, maybe more. So we are talking about putting security devices on all these doors.

And then the pilots that fly the commuters, when one goes to Memphis, and the other one goes to Indianapolis. They get to their destination and they have another security they have got to go through.

And it seems like all the pilots that land at various airports throughout the country will have to learn different access codes, these or write them down. Once they write them down they drop it somewhere or somebody else picks it up, they have got the combination to the door.

It seems to me that there is not a thread of common sense in this as it relates to the security of that door. It is a tremendous expense initially. I do not know what the estimates are, but we are talking about thousands of dollars per door. And some of these smaller airports will not have that kind of money. Secondly, there is no continuity for the retention of the access codes rather than having different ones and erybody trying to remember those. Maybe it is easy.

Mr. MCARTOR. Most of these systems will probably have a magnetic card access as opposed to a punch.

It would dilute the effectiveness of the system to have an unauthorized person know the computer code or to punch it in. So it would be more like an ID badge that would pass through a sensor that would open the door.

There is no question that the operating environment of a major airport is decidedly different from a small community airport, and we would want our rules to certainly not be a burden to the small airport. Again, I think we will see the final rule address that difference.

Senator FORD. Well, of course, the large airports you get into a huge expenditure when you look at all—you take Dulles, O'Hare, and just begin to look at the expense involved.

I want it to be secure, and I think that any deterrent would be better than what we have. But I just worry about it some. That is an expense that the airport executive and the board have to figure out how to pay for.

Mr. MCARTOR. Yes, sir. We are sensitive to that, but we are not totally driven by that, because we do want to make sure that——

Senator FORD. Not totally what?

Mr. MCARTOR. Totally driven by the expense, because we do have a security issue that has to be addressed in this country.

We have to maintain an adequate inventory or database of authorized people. The tragedy with the PSA murder accident points out that our system——

Senator FORD. That was a former employee who could have kept his little magnetic card too.

Mr. MCARTOR. But the computer can be programmed at that point to not honor that particular card, and it stops it at the point.

So one of the advantages of the computer-based system is that you can program it to only authorize people, certain people at certain entrances, at certain times of day.

Senator FORD. Well, it is something that—the expense I think and you say you are not driven by that, so I take it that the expense is not going to bother you too much. It is the security that is ultimate.

Mr. MCARTOR. Well, we have asked the industry to absorb a lot of very expensive equipment in the interest of either safety or security.

We are sensitive to expense but we are not totally driven by that before we issue a rule.

Senator FORD. You told me at your confirmation hearing that you did not anticipate making any major changes at the FAA.

And this spring you and Mr. Burnley reorganized the FAA regions and you both came up here and told me you did not expect to do any more. In June you announced another reorganization, and I wrote you a letter asking if this would be the last.

Now, let me ask you publicly. Are you through?

Mr. MCARTOR. Well, if I could just play with words a little bit, I do not recall saying that I would not make any major changes of the FAA.

In fact, I remember committing to you that I intended to make as many major changes as I could, because I think a lot of change is required.

I did tell you, however, that organizational change, because the energy it absorbs in an organization, would have to be weighed very, very carefully.

We found that during the course of the year one of the most consistent chronic complaints we had about the FAA was the inconsistency of the FAA among our various regions.

Senator FORD. Well, but you gave some ability to those regional people to make judgment based on the area in which they were located rather than try to paint with a broad brush and do the same thing in California as in Kentucky. They do not have any flexibility. You took that away from them.

Mr. MCARTOR. Right. There are dozens of reasons why the FAA was and is inconsistent. There are also just as many dozens of ways to address the inconsistency issue.

The Secretary and I believe that it was prudent to try to have more central policy interpretation, which we call straightlining.

A 45-day study, a joint study, by the FAA and the Secretary's staff on ways that we can improve internally the operation of the agency. One of the recommendations was to do this straightlining. Straightlining opened the door, then, for organizational change.

While you implied that there were two reorganizations, there really was just one. One was to begin the program and the other was required to complete it, because I do not believe that without the reorganization process that we went through in the early part of the summer that the straightlining or the consistency objective would have had a chance.

But it was a careful decision as to whether that is one of the things we wanted to try to accomplish this year. It was something that the FAA should do, whether it was this year or in the future.

The agency had an organization that was structured for maintenance and status quo and not for change. We needed to streamline it and get a more contemporary organizational structure, and I think we have done just that.

Senator FORD. Well, in responding to my letter, you stated that the reorganization would not require any additional financial resources.

That was a little hard, maybe resources, maybe you already had the money and you were spending it for that instead of spending it for something else. But I understand you were moving people in from the regions and then you were moving them around three or four times since they have arrived.

And every time you move them you move telephone lines and you know how expensive that might be. And when you have got a telephone with four or five lines on it, it is four or five times that expense.

I do not understand how this could be done without costs, and if you have got some magic formula you had better give it to us so we can save money up here also.

Mr. McArtor. I think the net result at the end of the day, when the straightlining activity is complete, we were able to streamline our regional activities and have fully implemented the executive director part of the organization. I think that we will find that we are very close to a cost-neutral kind of operation.

But clearly in order to begin that implementation does require some transition.

Senator Ford. In response to questions raised at the subcommittee hearing last March, you said the organizational changes were designed to increase FAA's responsiveness until fundamental legislative reforms were implemented.

Now, fundamental legislative reform could mean the separation of FAA from the Department. Did you have that in mind?

Mr. McArtor. Well, I think clearly the Congress has an obligation to try to create an environment in which the FAA can be more responsive to its users and its citizenry.

You have been working on one such initiative. The Secretary has propose,d I think, a very aggressive plan for separating out the operational side of the FAA so that it can be an environment that can be more responsive.

All of this is going to take some sort of Congressional action, and I would hope that the Senate and the House both would be very responsive to that and assist us in that regard.

We are trying to position ourselves on our side to accept that responsibility when given.

Senator Ford. Well, I was just trying to lead you on a little bit. You almost got out on the fringes there, but you kind of caught yourself and brought yourself back a little bit.

I am hoping that I could get you in the posture of saying that we are ready now that you are about to sever FAA from the Department of Transportation.

One thing that bothers me, and then I will turn this over to Senator Kassebaum, the Associate Administrator for airports has been downgraded, as I understand your new organization.

This position used to report directly to the Administrator, and now the position has been removed either once or twice, I am not sure exactly. Anyhow, it has been removed from direct access to the Administrator.

Does this send the wrong message to industry, to Congress, to the states and localities at a time when we are lamenting the lack of airport capacity?

Mr. McArtor. Not at all, sir. If there is a signal that has been received by the industry, and by our public—it is that there is no higher priority than airport capacity and the need for increased airport capacity. Airport capacity has been the subject of most of my public speeches, articles, and public discussions.

I had a discussion with the Associate Administrator for Airports as to what he felt the most optimum place during this particular time of the agency's organizational change and where we were.

He and I both felt that it would be more optimum for airports to be put under the development area so that we could have the synergy of those who are developing plans for capacity, air space capacity, be also involved in airport capacity.

So nobody that I know that has any real knowledge of the airport capacity issues in this country feels we have down graded that office at all. As a matter of fact, we have put it closer to access resources, which we call our operational research area, and I expect to see a lot of good things come out of that office.

Senator FORD. Well, imagery has a lot to do with it. When you take a position that has been as close to the Administrator as that one has been and you remove it from that posture down the line, you might be able to, in your own mind and with your small group, convince them that it is as you desire.

But it is very difficult to convince those who view with some alarm the tremendous problem we face and it appears that that position has been downgraded. It is hard to explain, I think. So you might accept it in your own mind and maybe time and distance solves a lot of problems.

I learned that from being Governor. After a lot of time and distance from the office, you look a lot better than you did at the time you were Governor. So maybe time and distance will make you look a lot better as Administrator. Senator Kassebaum?

Senator KASSEBAUM. Mr. McArtor, I would like to go back to the noise level for a moment. Do you feel, from the FAA perspective, that the noise level restrictions imposed by local jurisdictions, and I think we are all sympathetic to this, have become a problem for you in expanding the safety and capacity of airports?

How are you assessing this, and is there a need to pull together some sort of overall plan, in which various local jurisdictions can help with some framework so that similar standards apply around the nation?

Mr. MCARTOR. Yes, ma'am. You have identified a very very important issue where the debate has to continue, and that is the issue of capacity, access and noise. All three, really, are tied together.

You cannot talk about one without the other and clearly, in some circumstances, local noise, neighborhood noise restrictions impact very greatly the capacity of an airport, either with curfews or actual shut down of some runways and our inability to use those runways at different times of the day, if at all.

Then you have the access issues, pricing policies and who can use an airport. We are concerned about discrimination against a class of aircraft. So I think the debate has to continue that somehow sets, once and for all, the proper role of the U.S. Government when it comes to airport issues.

We have to balance our concern for a national air transportation system and interstate commerce with all of our objective to try to keep Federal government out of local issues as much as possible.

It is an honest debate. There is no mischief involved, but it has to continue because the answers are not yet known. And I would hope that this Committee could possibly take a leadership role in eliminating those issues and reaching some conclusion.

Senator KASSEBAUM. I think it is very important. Has there been any effort at DOT or FAA to set up some sort of advisory committee to work on this?

Mr. MCARTOR. Well, we have had an airports access and capacity advisory committee that has advised us on things and made certain suggestions to us. But I do not know that any long term conclusions have been reached.

Senator KASSEBAUM. Did that committee consider airport noise?

Mr. MCARTOR. It has not only to do with the noise footprint but the different technologies that could be approved or the stage II, stage III aircraft issues. All of these are very, very important issues to this country.

Senator KASSEBAUM. That is true, but it seems to me that even with those guidelines, the local jurisdictions then jump in with their own evaluation and that can cause, as you well know, great difficulties for the various airlines and companies trying to assess where they should be ten years from now in terms of a new fleets of planes and so forth.

Maybe it is important to bring in some of the local jurisdictions, some of the mayors and city council members from major cities that have considered this issue within their own jurisdictions. Have they been a part of this group?

Mr. MCARTOR. We have had airport operators, the users, the airlines, commuter airlines and; as that group was formed, I do not know that we have had any of the local citizenry in that. I do not think they have been members of that particular advisory group; no, ma'am.

Senator KASSEBAUM. I would like to close with a question. We are just getting ready in both the House and Senate to pass an omnibus drug bill. One of the major means, of course, of transporting drugs is aircraft. And we have had legislation dealing with this in various ways.

I was struck, in looking at some records of a Wichita company that does computer tracking of the ownership and operators of aircraft, how extensive this list can be and how much it differs from the list the FAA keeps.

An aircraft owner can be a country or a bank, or a leasing company, and in that case the individual operator, then, would not be on file. Is that correct?

Mr. MCARTOR. That is correct.

Senator KASSEBAUM. It becomes very difficult to keep track of the real operator.

Mr. MCARTOR. There is a difference between the owner and the operator in many circumstances.

Senator KASSEBAUM. Have you given any thought to trying to utilize a service such as this? It seems to me it could provide valuable data, not only for the illicit drug operations but also to provide a better tracking system of where some of our planes are.

Mr. MCARTOR. Well, we have given more than just careful thought to it. We are very intrigued by the informational data bases that the private sector can assist us with, and it is likely that we will seek some of those services.

We are updating our own data bases to tighten up our certification lists of both aircraft and airmen. We are very heavily involved in the drug interdiction efforts with Coast Guard, U.S. Customs and the Drug Enforcement Administration.

I myself am a member of that drug interdiction committee. We have got rules in place now and soon to come out, which unfortunately could further restrict the ability to fly around our air defense identification zones.

We have enlisted the support of not only our own inspectors but of the entire aviation industry to look for abnormal modifications to airplanes. We have gotten the total support of the industry on that, so we are making, I think, some real progress toward trying to keep civil aviation inaccessible to drug smugglers.

I do think this database cross referencing that you referred to would be one very valuable asset to us.

Senator KASSEBAUM. Thank you, Mr. McArtor. Thank you, Mr. Chairman.

Senator FORD. Thank you, Senator Kassebaum. Senator Breaux?

Senator BREAUX. Just one other point I want to get into, if I may, Mr. Chairman.

As members of the Aviation committee, we are getting, I think, more and more questions about the general safety of the airline industry and the planes they fly. One of the concerns that has been in the news is the condition of the equipment of the carriers.

We have an aging fleet among most all of the major carriers. We have had the Aloha Airlines incident, where an airframe apparently had somewhat deteriorated because of the environment and the age and number of take offs and landings.

FAA has recently done a number of ramp inspections of the actual aircraft, I think, of Eastern Airlines and I think also on Continental Airlines. We have had petitions filed, as I understand, with the Department of Transportation, by some of the employees of TWA Airlines, alleging that their company is not investing enough money into new equipment.

I guess my question to you as FAA Administrator is, how do you ensure the structural safety of the equipment? Do you think it is within your authority to look into the questions of management of financing, of investment, of replacement of planes?

Or is it more limited to just looking at that condition of that equipment right now, or are you under a greater obligation than that?

Mr. MCARTOR. No, I think you bring up a very interesting issue, and an important issue, but the FAA would not, as part of our mission, be involved directly in either recommending to a carrier that they need to reconfigure or update their fleets.

We are very much involved, of course, in setting the standards for compliance and setting the standards of engineering that must be adhered to in our business, and the maintenance programs and inspection programs required of older aircraft.

We hosted an international conference here this Spring, following the Aloha accident, and for the first time began to identify human factors areas on the maintenance line, not just in the cockpit.

I want to make sure that whatever it is we are expecting of that mechanic who is looking for small cracks along a rivet line is equipped, both mentally and with the technical support to do a good job. Because we are relying on that inspection heavily, as to whether that airplane continues to be air-worthy or not.

But the fitness of an airline rests more with the Department of Transportation unless it is the fitness or the willingness to be compliant from the safety side. Then, of course, we are very much involved with the Department.

But the financial fitness part of that investigation would rest with the Department.

Senator BREAUX. As a hypothetical, this past week I flew on A DC-3, operated by a carrier, that had more hours on it than the DC-3 that we have hanging in the Smithsonian, which the captain proudly announced to the concern of some of the passengers.

But he also announced that it was the very last flight of that particular DC-3, which I was not really sure what he meant by that.

But anyway, assume you have an airline that operates, just for the sake of the question, all DC-3s today. From an FAA standpoint, you would not be concerned that they have not modernized their fleet, only with the actual condition of those planes as they are put in service?

Mr. MCARTOR. That is correct. We would, of course, be very interested in their corrosion control programs and engineering efforts, and frequent inspection of those aircraft to make sure that they remained airworthy.

But an old airplane is not an unsafe airplane. A poorly maintained airplane, whether it is old or new, could possibly be unsafe.

Senator BREAUX. Is it your understanding that it would be more within the purview of the Department of Transportation, as opposed to the FAA Administrator, to look into the question of what investments and management practices the airline is maintaining?

Mr. MCARTOR. I am not sure whether the fleet mix, though, is even a fitness issue that the Department would address. The Department might address the capital base and the financial resources and management commitment to be a compliant air carrier.

But I know of no circumstance where the Department has been concerned about the actual equipment that they fly, the fleet mix itself, whether it is old aircraft or new aircraft. I do not really believe that is material to the fitness of an airline, whether they fly old airplanes or not. It may be material to the profitability of the airline or of concern to the employees, but not necessarily to safety.

Senator BREAUX. You are safety. They would be more financial fitness to operate?

Mr. MCARTOR. Yes, sir.

Senator BREAUX. Okay. Thank you, Mr. Chairman.

Senator FORD. Thank you, Senator. I have a couple more questions and some that other Senators asked that I ask and it will be obvious which Senators wanted me to ask questions.

The fiscal year 1988 Department of Transportation Bill added Nantucket, Massachusetts to the list of sites scheduled to receive an ASR-9 radar. I understand that the Nantucket radar will be the second buy. When will the Nantucket installation take place and when will the radar be operational?

Mr. MCARTOR. It is my information that the Nantucket radar, it is not in the first buy of those radars, but probably 1991. The Congressional interest and direction was not received until late, so that the first 10 of the ASR-9 installations have been mandated by Congress and Nantucket will be in the second buy.

Senator FORD. Well, as I understand it, that area is known for its changeable and unpredictable weather. What criteria are used to determine the order of the installations?

Mr. MCARTOR. Well, the ASR-9, of course, is not being installed because we do have radar coverage in an area. It is an upgrade and a sophistication, so we are not left without radar coverage until we install one of these.

I was just reminded, by the way, that I stand corrected that 1991 is when the equipment would be available. It would be commissioned probably in calendar year 1992 for Nantucket.

Senator FORD. In the Airport and Airway Safety and Capacity Expansion Act of 1987, we directed that the Secretary study and report on aircraft design and equipment which would minimize fire or explosion.

We included in that, breakaway fuel tanks, and that report, I understand, is due in December. Can you comment on any of the findings and may we expect the report to be submitted on time?

Mr. MCARTOR. The report is on time. I mentioned a little earlier, and probably because of recent circumstances it should bear repeating, breakaway fuel lines are, of course, something that we would want to look at, but we do not want to overestimate their utility, because what we do not want to do is create a safety system that creates more problems than it solves.

I repeat, the last thing we want to do is, in normal operations, have a line disconnect, which has been the experience in the industry before. So I do not want to assume that breakaway fuel lines is some sort of end all with respect to fuel fires at a crash site.

There are quick disconnect systems between fuel bladders or between fuel tanks, and that is okay, but we do not want to isolate the fuel from the engine with a breakaway line unless we can make sure that it is as failsafe as it possibly can be.

Senator FORD. Well, most of our questions are coming as a result of the recent Delta crash. And it is my understanding, by reading the paper, you do not have any more information than I do, I guess, that you can tell us, but this did not cause the problem.

It was that they did not get the lift. And so we are looking at a lot of things, I guess, back to the research as it relates to the human factor, I guess.

Mr. MCARTOR. Yes, sir. That is, I think, one of the areas we are going to have to continue to concentrate on, as evidenced by this crash.

Senator FORD. Let us talk about the MLS/ILS that Senator Kassebaum brought up. What is the status of the MLS contract? Is it true that you and Hazeltine have not even agreed on a delivery date or deliver schedule?

Mr. MCARTOR. The MLS contract is in trouble. It is in trouble from our perspective and from Hazeltine's perspective, as well. It is almost three years late.

We have had trouble with the vendor performance; the turnkey feature of it, the installation feature, is now being contested.

Senator FORD. Contested by whom?

Mr. MCARTOR. By Hazeltine.

Senator FORD. By a competitor?

Mr. MCARTOR. No, sir. They want some relief. The vendor wants some relief from the installation part of that. We are trying to develop a solution that will get us the product with the most value to the taxpayer.

We have been reminded, though, that we have a lot of work to do on our own program management side. That is one of the reasons that we set up our ADM organization—to try to provide some check and balance and oversight so that this does not happen again.

So I think both sides could probably have conducted themselves better over the last three years, but we are most concerned about the inability of the vendor to perform according to the contract.

Senator FORD. Well, in the F&E authorization, I think we required that $30 million be spent during fiscal year 1989 for ILS equipment. Are you allocating those resources in addition to AIP funds that are being spent for this purpose?

Mr. MCARTOR. Well, the MLS buy had been funded previously. The monies that we will be using in the next fiscal year, fiscal year 1989, will be the demonstration of the Category II, Category III and circling approach capability of the MLS. It is not a part of——

Senator FORD. Well, the $30 million I am talking about is the purchase of ILS equipment.

Mr. MCARTOR. I beg your pardon. I thought you were referring to the monies we have in next year's budget.

Senator FORD. No, the $30 million that is to be spent in fiscal year 1989 to purchase ILS equipment. Are you allocating those resources to move in that direction?

Mr. MCARTOR. Yes, we have procured the first 17 systems of the ILS buy.

Senator FORD. How much of the $30 million—is it all coming out of the $30 million or is it all coming out of AIP funds or is there a mix?

Mr. MCARTOR. I am reminded that Congress withdrew the ILS money in 1989. We submitted monies for ILS in 1989 but we have not been appropriated monies for ILS in 1989.

Senator KASSEBAUM. That comes as news to me.

Senator FORD. We are all kind of spinning our heads up here.

Mr. MCARTOR. We have $30 million for the MLS demonstration program. That is what I thought we were referring to. But we have an ILS buy that we have bought 17 systems. That was 1988 monies that we used for that.

Senator FORD. We have money for ILS in conference for 1989.

Senator KASSEBAUM. It is my understanding that in the appropriations conference that took place last week, there's $13 million for MLS and some ILS money as well.

Senator FORD. I thought so, too. I wish I could remember it all.

Mr. MCARTOR. With your interest, Mr. Chairman, in this, if you will allow me to get the specific details and let me share that with you and the rest of the Committee. The fiscal year 1988 procurement monies for ILS, which we have procured; then we had the demonstration monies for MLS for 1989.

But I am not aware of any specific ILS monies for 1989. Perhaps your staff and I can work on that detail and get back to you later.

[The following information was subsequently received for the record:]

The requirement to obligate $30 million for ILS equipment in fiscal year 1989 is included in the Airport and Airway Safety and Capacity, Expansion Act of 1987 (Pub. L. 100-223) which authorized the FAA's F&E program for three years. However, both, the House and Senate Appropriation Committees deleted the FAA's $10 million request for ILS's in the fiscal year 1989 budget, in favor of funding ILS through the Airport Improvement Program.

Despite this Congressional action, however, other ILS work will still be, accomplished in the F&E program. FAA will be installing 16 ILS's, for which the contract was awarded in fiscal year 1988, as well as installing a localizer and glide slope (added by Congress,to the fiscal year 1988 F&E program). FAA will also be replacing some ILS's and providing glide slope modification kits funded through the Interim Support Plan in the fiscal year 1989 F&E budget. Obligations for these programs will occur over the next several years and will total approximately $32 million.

Senator FORD. I have several other questions that I am going to forego, even asking you for your travel schedule for the rest of the year. I thought I would just forego that. Give my friends in New Zealand my regards, will you? Both of them?

One final question. The General Accounting Office recently issued a report that was critical of airspace reserved for military use, specifically, on the need for improved data on where, when, and how airspace is being utilized and the need for improved guidance to the regions. Have you responded to GAO's concerns?

Mr. McArtor. Yes, sir. I am pleased to comment on that. I have great regard for the GAO, and I hope that that report has been in printing for about ten months, because I am not sure where they have been.

We have created——

Senator Ford. I would not try to take them on, now.

Mr. McArtor. No, sir, but I want them to be aware of all that we are doing with respect to special use airspace to try to improve this, both within the civilian community and the military community.

We have created an office of military operations within our air traffic control office to coordinate airspace approvals and the communication required between the use of the airspace by the military and then be able to turn it over to us, in some circumstances, for civil use.

It requires better equipment, better procedures, better communication links. We have had a dialogue with all the major services. We have been to visit these areas. It is one of our absolute focused efforts this year, and it has to be done in balance.

We cannot just assume that we can take airspace away from the military only because it is used less frequently than our air routes. I think I, better than most, recognize the need for adequate specialty operating areas for the military, but yes, we have a very important and aggressive program underway right now at FAA, and I am anxious to share that information with the GAO.

Senator Ford. Well, we ran into that problem. We held a hearing in Phoenix. We have also got problems in Florida and all around. The inner mix of understanding and use is very, very important.

Let me ask one final question, and I will get this on the record before I send you the questions to ask you to respond in writing.

Our reauthorization legislation directs the FAA to develop a schedule for TCAS II by June 1989. The final specifications for TCAS II have not been published. Their required logic has not been finalized and the equipment being evaluated does not include the final TCAS II logic.

Will the FAA be able to complete all the tasks required in the specified time, and how does FAA plan to solve these problems?

Mr. McArtor. We think we can make the timeframe.

Senator Ford. You think you can? Do you have any confidence that you can?

Mr. McArtor. I would give ourselves about a 75 to 80 percent confidence level.

Senator Ford. Well, 20 percent is usually the most costly part of the study, you know, or the most costly part of the contract.

Mr. McArtor. We obviously want to push as quickly, as prudently possible with the introduction of TCAS. We think that the standards can be reached. We think the industry, the suppliers, will be able to respond, and we believe the air carriers will be in a position to begin configuring with TCAS.

But have all of the problems been solved? Not yet. Do we have reasonable confidence that they can be solved in the timeframe? Yes.

Senator FORD. Seven to three odds will pay you about twelve dollars on a winner. Senator Kassebaum? Senator Breaux? We will have some other questions from Senators who could not be here. We appreciate your patience and your tolerance and we look forward to your next months in office.

[Whereupon, at 12:01 p.m., the hearing was adjourned.]

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR FORD AND THE ANSWERS THERETO

Question 1. Is the agency devoting sufficient resources to human factors research? No you have enough RE&D funds for this purpose, and are you taking full advantage of NASA expertise in this area?

Answer: There has not been sufficient focus on human factors in the past. We believe that we are now targeting adequate funding for human factors research. For fiscal year 1989, the R,E,&D budget includes $5.2 million for human systems and operations, which primarily covers flightcrew and controller human factors. In addition, $566,000 is budgeted for human performance research at the Civil Aeromedical Institute. We expect that in fiscal year 1990 human factors funding will increase substantially. Some human factors research is also embodied in projects addressing airborne windshear detection and avoidance, microwave landing system advanced procedures, traffic collision avoidance systems, and data link applications. The Aviation Safety Reporting System (ASRS) is often used by human factors researchers and is funded at nearly $2 million annually from the aviation safety budget. These funds are adequate to accomplish the research recommended by recent government/industry task forces. We are also in the process of hiring several human factors specialists to assist in the develop'nent of our human factors programs.

The FAA works very closely with NASA which has a key role in our Human Factors Program. In addition to operating the ASRS for the FAA, NASA conducts a number of research projects with or for the FAA, under interagency agreements. In May, we entered a 5-year agreement dedicated specifically to aeronautical safety and human factors. Our Human Factors Program will also be coordinated with the NASA Aviation Safety and Automation Program beginning in fiscal year 1989.

Question 2. In the Airport and Airway Safety and Capacity Expansion Act of 1987, we directed that the Secretary study and report on aircraft design and equipment which would minimize fire or explosion, including break-away fuel tanks. That report is due in December. Can you comment on any of the findings? May we expect the report to be submitted on time?

Answer: A draft report is currently undergoing technical review within the FAA. Until completion of our review, it would be premature to comment on any of its findings other than to note that we continue to have serious concerns with break-away fuel tanks. The report is scheduled to be submitted to Congress in December, pursuant to Public Law 100-223, and we plan to meet that commitment.

Question 3. The bill that Senator Kassebaum and I introduced (S. 2746) would authorize research on aging aircraft as well as on low flammability fuels. What research is the FAA conducting now in these areas? What more needs doing?

Answer. In 1989, we plan to initiate a major R&D, test and evaluation program on the inspection of aging aircraft, which can be used to uncover incipient fatigue, corrosion, and delamination in aircraft fuselages and engines. Initially, we will obtain and evaluate all published information on nondestructive testing (NDT) and nondestructive inspection (NDI) and determine those techniques and equipment that are applicable and most effective for use on aircraft and powerplants.

In addition to transferring NDI/NDT procedures and equipment to the aviation field, we will modify or further develop promising inspection systems to make them suitable for aircraft and powerplant use. As part of this effort, we will conduct a program on destructive testing of aged aircraft and engines. Besides developing and modifying NDI/NDT equipment and procedures for aircraft and engine use, we plan to develop training programs for inspection and maintenance personnel, including handbooks, videos, and other training aids.

For furtherance of this effort, we will establish and maintain close working relationships with other Government and civilian organizations involved in NDI technology and materials research, such as the Departments of Energy and Defense, NASA, the National Bureau of Standards, as well as nonprofit research groups which are active in the use and development of NDI/NDT. On a periodic basis, we plan to host symposia on new developments in aircraft and engine inspection technology.

We will also initiate a detailed study of environmental and operational factors that affect aging, fatigue, strength, performance deterioration, and crack propagation @f aircraft structures and powerplants to determine how these factors cause damage and how this damage can be prevented or arrested. The major areas of work to be covered in the program as now planned are problem definition, NDI equipment, inspection procedures, human factors, fatigue life tracking system, failure prevention technology' environmental effects, detection/predictive techniques, fabrication techniques, training/inspection upgrades, new monitoring techniques, and spare/replacement parts criteria.

In the area of low flammability fuels, we have an integrated research and development program which includes liaison with, and review of safety fuel development by, the Fuel, Lubricant and Equipment Research Committee of the Coordinating Research Council (CRC) and identification of methods for reducing post-crash fuel fire hazards. At an FAA-sponsored fuel safety workshop in 1985, three non-FAA working groups of Government and industry representatives were established to review this and other past programs and make recommendations to the FAA an future fuel safety work. All three groups recommended that we continue our research on safety and fuels to reduce post-crash fire hazards. A study was recently completed under the Small Business Innovation Research Program which apPlied a systems approach to identify the most promising methods for reducing the post-crash fuel fire hazards. The final techniques which were considered to offer promise and were proposed for follow-on study are halon injection, visco-modified fuels (VMF), rapid gelling in combination with VMF, and open cell foam type materials in combination with VMF.

We are continuing to monitor safety fuel development activities of the petrochemical industry and stand ready to support such development by conducting flammability and physical characterization tests on promising fuels. Finally, we have proposed an updated fuel safety Program which would include efforts to reduce further the Post crash fire hazard in commercial aviation by continued development of safety fuels and by modification of the aircraft fuel and propulsion systems to enhance the protection provided by the safety fuels.

Question 4. S. 2746 would require a national aviation research plan for a 15 year period with detailed cost estimates for the first two years, major project estimates for years three through five, and long term objectives for the balance of the time. Could you comment on this plan? Answer: I agree with the idea of a national. aviation research plan. The provisions of S. 2746 have now been incorporated into H.R. 4686 which has been enacted into law and signed by the President. We will comply with the requirements for a national aviation research plan which in the FAA's view represents a positive step.

Question 5. What are your views of a research advisory committee, appointed by the FAA Administrator, to advise and recommend areas requiring research?

Answer: I feel very strongly that aviation users should have a role in formulating our R&D program to help identify and prioritize our R&D needs. An R&D advisory committee is a good way to obtain user input, so I am very supportive of that approach.

Question 6. It used to be that the Regional Directors of the FAA had a fair amount of autonomy in molding FAA programs to meet the needs of their geographic areas of responsibility. Now that you and Mr. Burnley have "straightlined" all program responsibility to headquarters, what is the function of the so called "Regional Administrators"?

Answer: Under the executive direction of the Executive Director for Policy, Plans, and Resource Management, regional administrators serve as the principal agency representative in the region with industry, the public, and various governmental agencies. The regional administrators direct the policy, planning, and conduct of all regional administrative programs, developing regional policies and techniques to meet

agency program objectives in the areas of public affairs, communications control, civil rights, human resource management, budget, logistics, and management systems. Regional administrators direct the appraisal, planning, international aviation, and emergency operations functions in the region. The regional administrators also have appointing, classification, and pay authority for the region and participate in the performance appraisal of all regional personnel who report directly to the associate administrators.

Regional administrators identify, coordinate, facilitate, and advocate agency positions on local issues that cross Program lines. They evaluate the status of civil aviation within the region and maintain contact with industry and the public to promote increased understanding of FAA functions, to increase understanding of the basis for policies where these Policies may have been misunderstood by the public, and to increase agency capacity to develop aviation. Finally, regional administrators serve as the Adn:inistrator's "eyes and ears" in the field.

Question 7. The Task Force that you and Mr. Burnley established recommended some internal procurement reforms. Have those been implemented? Did you establish the new Associate Administrator who was supposed to expedite and highlight the procurement function?

Answer: We have implemented procurement reforms primarily based on the transfer of significant procurement authorities by the Secretary of Transportation from the Department to the FAA. These delegations provide substantial authority to the FAA Administrator for contracts and programs up to $150 million in the areas of source selection, program approval, and contract review. As a result, we have already seen shorter procurement cycles. We anticipate further improvements as acquisition and procurement personnel become more familiar with the new implementation procedures.

With regard to the establishment of a new associate administrator to expedite and highlight the procurement function, this was not a recommendation of the Secretary's Task Force.

Question 8. What has happened to the Airport Capacity Program Office under the reorganization? Please give me a before and after picture with regard to mission, staff and budget.

Answer: A new National Airspace Capacity Office has been established under the Executive Director for System Operations. Likewise, the new Operations Research Office and the Advanced System Design Service under the Associate Administrator for Advanced Design and Management Control will be undertaking new capacity initiatives.

The Airport Capacity Program Office will maintain the same mission as before, serving as the aviation industry advocate and overall coordinator for the FAA airport capacity Programs including airport development, airspace capacity projects and procedures, new systems and equipment, and new capacity planning initiatives. The Director of the Airport Capacity Program Office will report to the Associate Administrator for Airports. The staff consists of specialists in airport development, airspace procedures, air traffic control, capacity planning, and project management. The assignments are rotational and there is a continual influx of new experience, disciplines, and abilities. The staff levels will remain the same as authorized in the past with an Office Director, Deputy Director, four specialists, and support staff. The fiscal year 1989 operations budget for the Airport Capacity Program Office will remain the same as the fiscal year 1988 level of $1.8 million. However, the office will direct the allocation of the $5 million congressionally mandated special appropriation for capacity projects in fiscal year 1989. In addition, the office will provide input into the congressionally mandated requirement to allocate $25 million of R&D funds for airport capacity and development.

Question 9. Recently the FAA inspected a plane chartered for use by the Democratic candidate for President. According to Press reports, the inspection was conducted shortly before the Plane was scheduled for take-off. Several problem areas were identified and the plane was grounded, thus causing Mr. Dukakis to miss his scheduled stop. Will you exPlain exactly what happened and outline what if any changes you have made to assure that this will not happen again?

Answer: The ramp inspection performed on Governor Dukakis aircraft was conducted on September 6 under a surveillance program established to assure that aircraft of presidential candidates and campaign press personnel are inspected on a periodic

basis. The program is designed to avoid interference with scheduled campaign activities and, to the extent possible, is coordinated with the air carrier so that inspections can be performed during overnight or weekend maintenance.

On September 6, the FAA was told by the Secret Service that the aircraft was scheduled to depart at a particular time. Ordinarily, a ramp inspection is conducted with the flight crew 60 to 90 minutes prior to scheduled departure and takes about 30 minutes. Unfortunately, on September 6 the scheduled take-off time was changed without prior notice to the FAA. When the inspection was begun, the FAA inspectors were informed they had 1 hour to perform the inspection. They completed their check in 25 minutes.

It should be noted that the FAA inspectors did not ground the aircraft, but rather notified the flight crew of the discrepancies the FAA found, and the flight crew decided to cancel the flight. Since the cancellation caused a disruption to Governor Dukakis schedule, procedures have been instituted which call for closer coordination with the Secret Service and the campaign schedulers to preclude a recurrence of this incident. In addition, whenever possible, ramp inspections will be scheduled for the primary base of operation for all campaign aircraft to allow for easier coordination and communication between the aircraft operators, the Secret Service, campaign staff, and the FAA.

Question 10. The problem with the plane appeared to be serious enough to ground it. May we assume the plane landed in that condition? Had it been inspected before? Since it is carrying a Presidential candidate, why was it not inspected before any trips were made?

Answer: The aircraft was inspected on three occasions prior to September 6 and no significant discrepancies were noted. During the September 6 inspection four discrepancies were noted. The stall warning system sensor vane was bent away from the fuselage and had most likely been struck by a jetway or boarding ladder. Rather than replace the sensor, someone had attempted to realign the arm by bending it back to its original configuration. It is probable that inaccurate information would have been sent to the aircraft's air data computer system and, in the worst case scenario, the flight crew would not receive warning of an impending stall condition. Because of the small size and location of the stall warning vane (well above eye level on the left forward fuselage), it is not possible to determine when the damage occurred. The aircraft may have landed in that condition or the damage may have occurred following landing.

Two other discrepancies involved the emergency exit lighting system, while the fourth discrepancy involved the trailing edge flap. These discrepancies were corrected or deferred in accordance with approved maintenance procedures.

Question 11. Last year in the Airport and Airway Reauthorization legislation we directed that a study of long-term airport capacity needs be undertaken. What is the status of that study?

Answer: The study of long-term airport capacity needs is underway. We expect to issue an interim report by January 1989, forecasting the national demand for air transportation through the year 2050. We then plan to follow up 1 year later with a report detailing the effect on individual metropolitan areas.

Question 12. You have spent a good deal of time and money developing a new computer model to address airport capacity problems. I believe you referred to it as NASPAC. Could you explain briefly how this will work and when we could expect to see a useful application of the model?

Answer: The development of the National Airspace System Performance Analysis Capability (NASPAC) computer model is now virtually complete. NASPAC will be ready for application this December. The model simulates aircraft movement across the National Airspace System, identifying current and potential delay/capacity bottlenecks in both terminal and en route airspace. This capability, available for the first time to the FAA, will enable us to facilitate airspace and airport capacity improvements.

The initial applications of NASPAC during fiscal year 1989 will include assessing the effect of planned airport improvements at Denver, Los Angeles, and Dallas/Fort Worth on total system Performance throughout the United States.

Question 13. I understand that airspace capacity projects have been undertaken with a good deal of success at certain locations around the country. How have these been managed in the past and what are your plans for conducting more of them?

Answer: In the past, airspace capacity projects were managed in the regions with coordination and oversight provided by Washington headquarters staff. However, with the growing demands on the National Airspace System, a national office has been established under the Director for Air Traffic Operations. Any major airspace change must be analyzed for its national impact. For example, adjustments on the East Coast may affect routes and airspace 2,000 miles away. The National Airspace Capacity Staff will coordinate, validate, and provide management oversight for all major airspace proposals to ensure effective integration into the National Airspace System. Local airspace proposals will continue to be managed by a regional project manager with appropriate coordination with the national office. Currently, automated models are being used for airport and airspace modeling at several locations, and we plan to continue using them.

Question 14. Do you believe the airport capacity task forces that have been underway in several cities across the country are providing useful ideas in addressing capacity issues? Will these be continued under the new organizational structure?

Answer: These task forces have been of tremendous help. Airport capacity task forces are currently underway at nine major airports. To date, task force efforts have been completed and capacity plans produced at San Francisco, Atlanta, Detroit, and St. Louis. Several new runways are being planned as a direct result of the airport capacity task forces, and over 200 other airport capacity projects have been identified, with many of them now entering the implementation stage.

Capacity task forces will be continued. The Airport Capacity Program Office has produced a 3-year plan which calls for establishing capacity task forces at approximately 36 major airports through 1991.

Question 15. FAA has recently completed rulemaking on requirements for MODE C transponders. There is also a rulemaking underway to require TCAS II in airlines. Airline pilots and operators do not believe that the MODE C requirements are sufficient in airspace adjacent to Airport Radar Service Areas to assure that TCAS will protect against mid-air collisions. What needs to be done to be certain that the effectiveness of TCAS is not compromised by inadequate transponder requirements without unreasonably burdening general aviation?

Answer: We believe that the new Mode C final rule should be adequate. Of the 220,000 registered aircraft, approximately 179,000 currently have transponders. The new Mode C final rule will increase the number of transponder-equipped aircraft by 32,000 for a total of 211,000 and require that all these transponder-equipped aircraft have Mode C capability. The remaining aircraft, including experimental and nonelectrical airplanes, fly below 3,000 feet and pose no threat to aircraft within or adjacent to an Airport Radar Service Area.

Question 16. The Advanced Automation System is the heart of the National Airspace System modernization plan. What can you tell us about the bid protest of the AAS contract just awarded. What is the worst cast scenario you can envision for delay to the AAS program and what is the FAA doing to plan for such a contingency?

Answer: On October 28, the General Services Administration Board of Contract Appeals upheld the AAS contract award to IBM by denying the bid protest of the Hughes Advanced Systems Company.

Question 17. Do you agree that the delay in the AAS Program evidences the need for reform in FAA procurement practices?

Answer: The delay in the AAS Program highlights the need for congressionally approved modifications to the procurement process. Further improvements are needed to facilitate implementation of the NAS Plan, and we believe it would be helpful for the next Congress to continue to explore the kinds of improvements which should be made.

Question 18. On August 4, 1988, you said that the FAA would not be able to meet the Congressionally mandated levels for the full performance controllers by September 30. You also said that the rebuilding effort is now complete. Controllers in Washington Center and Chicago Tracon say that six day work weeks continue to be the norm. If rebuilding is complete, why does the overtime continue?

Answer: As of September 30, there were 9,858 full-performance-level controllers (FPL), which is below the congressionally mandated number of 10,350. However, the controller work force as of that date totaled 16,436, which is higher than the pre-strike

employment on July 31, 1981, of 16,234. The job now is to bring the more than 4,500 developmental controllers up to the full-performance level. To that end, we are still using overtime in order to provide for on-the-job instructors, training to accommodate airspace changes, and annual and sick leave. At Washington Center, for example, there were 242 FPL controllers and 146 developmentals as of September 30.

At the Chicago Tracon, we are adding two new controllers per month. This rate should increase to three new controllers per month as we increase our ability to provide training. Four controllers who have previous experience at the Chicago Tracon have returned to that facility on a temporary detail, and five other employees will be temporarily assigned to the facility by November 20, 1988. We are also reassigning three radar instructors and two tower instructors to operational duties within the next month. In order to continue to recruit experienced FPL controllers, the FAA has obtained Office of Personnel Management (OPM) approval to conduct a pay Demonstration Program for Chicago, as well as for other hard-to-staff locations, which would provide the equivalent of up to 20 percent of the employee's base salary. Additional FAA programs will attempt to attract applicants from the Chicago area for employment in FAA facilities in the Chicago metropolitan area.

Question 19. We hear of facilities that are chronically short of staff and/or full performance level controllers. What needs to be done to insure adequate staffing at these facilities?

Answer: We currently have two projects underway to help the issue of facility staffing. The first is the Pay Demonstration Project, discussed in the above answer, which would give a pay bonus to employees occupying safety-related positions at selected hard-to-staff facilities, such as the facilities in the Chicago metropolitan area. The objective of this project is to test whether pay incentives would facilitate recruitment and retention of employees in these facilities. If implemented, this project would be for the short term. The second project, the New Pay System, which would be for the long term, will study the need to change the general pay schedule for controllers at selected hard-to-staff facilities.

Question 20. You mentioned in your testimony that controller recruitment time had been reduced from six months to 45 days. How was this done? How many trainees have been recruited under the new system?

Answer: The streamlined hiring process for air traffic controllers will be accomplished by receiving a delegation of authority from the Office of Personnel Management (OPM) for the competitive written examination function and to score the examination using optical scanners; devepoping software and procuring hardware to enable the FAA to Provide immediate score feedback to applicants who take the examination; developing a cooperative agreement with the Federal Bureau of Investigation to hand carry security documents for clearance; receiving a delegation of authority from OPM to conduct the major portion of the security inquiries; and automating the preemployment processing including the certification of eligible candidates.

The first stages of the streamlined hiring process were formally initiated on September 6, 1988. As of that date, over 600 qualified entre-level air traffic control candidates began processing using the "fast track" procedures. The first of these candidates have reported to the November 8 class at the FAA Academy in Oklahoma City.

Question 21. What changes are you making in the screening process to reduce the wash-out rate at the Academy?

Answer: The FAA is developing a new selection procedure to replace the screening aspects of Academy training. The training program will be redesigned to focus on simulator-based radar training. By redesigning our training and through better screening of applicants prior to making hiring decisions, we hope to reduce the wash-out rate.

The FAA has contracted with the University of Oklahoma to conduct a job task analysis of current en route and terminal controller jobs as well as the en route jobs as they will function under the advanced automation system (sector suites). One outcome of this analysis will be proposals for specific measures of controller aptitudes. We will examine these proposed measures to determine if they can be used to supPlement the current OPM written test for the controller occupation.

Question 22. What progress is the FAA making in hiring qualified former military controllers?

Answer: In January, we learned that the military services were reducing their work forces as a result of budget reductions. In order to accomplish the personnel cuts required in fiscal year 1988, the military services began offering early releases to certain military personnel, including air traffic controllers. The FAA immediately tapped this newly available pool of qualified applicants by opening a nationwide vacancy announcement for GS-9 (in contrast to the usual GS-7 grade) air traffic control specialists under a special delegation of authority from the Office of Personnel Management. The announcement was open from February 17 through March 4 and solicited approximately 1,400 eligible applicants. Of these, over 600 of the most highly qualified have been selected. To date, over 400 have been hired. Another 100 to 200 will be hired before the end of the calendar year, depending on their continued availability.

Question 23. How much has the MLS contract slipped from the original dates, and how long does the FAA expect to negotiate with Hazeltine on the Turnkey portion of the contract?

Answer: The commissioning date for the first MLS network was originally set for January 12, 1986. As of October 1, the contract will have slipped by 34 months due to a number of problems experienced by Hazeltine.

Hazeltine has Proposed that the FAA assume a substantial portion of the turnkey work required by the contract. Although the FAA has not accepted this proposal, it and other possible alternatives are under consideration. We will continue to work with Hazeltine in an attempt to resolve our contractual differences.

Question 24. The existing F&E authorization requires that $30 million be obligated during fiscal year 1989 for ILS equipment. Is the FAA allocating this amount in addition to AIP funds also being spent for this purpose?

Answer: The requirement to obligate $30 million for ILS equipment in fiscal year 1989 is included in the Airport and Airway Safety and Capacity Expansion Act of 1987 (Pub. L. 100-223) which authorized our F&E program for 3 years. However, both the House and Senate Appropriations Committees deleted our $10 million request for ILS in the fiscal year 1989 budget, in favor of funding ILS through the Airport Improvement Program.

Question 25. The General Accounting Office (GAO) recently issued a report critical of the FAA's management of airspace reserved for military use—specifically, the need for improved data on where, when, and how airspace is being utilized, and the need for improved guidance to regions. What is the FAA doing to respond to GAO's concerns?

Answer: We concur with each of the GAO recommendations and have undertaken a series of initiatives to implement each recommendation. We are in the process of developing a standardized reporting format for special use airspace (SUA) based on actual use data. Secondly, we are establishing a new military operations division which will be the focal point for all military matters and coordination with the Department of Defense for the effective management of SUA. We are also developing criteria, policies, and procedures for use in evaluating the utilization of SUA. These criteria, to include frequency of use, types of activities, and a determination if modification of SUA or revocation is warranted, will establish a threshold at which more detailed evaluation of the effectiveness and continued need for the SUA will be initiated. We plan to publish our new criteria, policies' and procedures in appropriate FAA directives for regional and national guidance for more effective SUA management.

Question 26. The spectacular tragedy at a West German airshow last month in which nearly fifty people were killed highlighted the potential dangers associated with such a demonstration. As FAA Administrator and a former member of the Thunderbirds, do you believe there are adequate safeguards to warrant continuation of these airshows?

Answer: I believe that we have adequate safeguards to warrant continuation of airshows in the United States. Airshow maneuvers similar to the one attempted in West Germany would not have been authorized by the FAA. Prior to the accident at Ramstein Air Force Base, FAA completed a thorough review and update of our safety guidelines and procedures for airshows in the United States. Those FAA guidelines and procedures provide a high level of safety for spectators as well as the communities adjacent to an airshow site.

The FAA is actively involved in the oversight of airshow events throughout the planning stage to the show itself. We issue waivers to the Federal Aviation Regulations

(FAR) to allow airshow performances within United States airspace. These waivers allow deviations from normal altitude and airspeed restrictions, provided that strict safety procedures, specified in the waiver, are adhered to. Waivers are issued on an event by-event basis and only after the qualifications of a performer and airshow sponsor are verified by the FAA and the show site has been surveyed and found to be acceptable.

We also publish airshow safety guidelines which specify show boundaries, altitudes, aerobatic maneuver restrictions, and other safety criteria. Each of our aviation safety inspectors assigned the responsibility of monitoring airshows has a copy of these guidelines. FAA aviation safety inspectors are present at every major airshow conducted within the United States to ensure compliance with the FAR and all the Provisions of the airshow waiver. In addition to the on-site monitor, we have an airshow coordinator in each of our regions and a staff in headquarters to ensure standardized airshow guidance.

Question 27. The DOT proposed rule on Carriage of the Handicapped indicates that seat assignments may be subject to an FAA safety regulation. Do you expect to initiate a rulemaking 'n seating in exit rows? If so, what is your proposed schedule?

Answer: The FAA has drafted a notice of proposed rulemaking (NPRM) concerning exit row seating. The draft NPRM is currently undergoing review. Upon completion of the review process, we plan to publish the NPRM for public comment.

DEPARTMENT OF TRANSPORTATION,
FEDERAL AVIATION ADMINISTRATION,
Washington, DC, November 21, 1988.

Hon. JOHN C. DANFORTH,
Committee on Commerce, Science, and Transportation U.S. Senate, Washington, DC

DEAR JACK: This is in response to your follow up question from my appearance before the Sucommittee on Aviation on September 13.

Specifically, you asked that I explain the basis for the Federal Aviation Administration's (FAA) decision to require the Traffic Alert and Collision Avoidance System (TCAS) rather than the Airborne Collision Avoidance System (ACAS). You also indicated that general aviation pilots have expressed concern that ACAS would have cost users less and may have been more effective.

TCAS is an airborne collision avoidance system, which provides information to the pilot without reliance on our ground-based air traffic control system.TCAS equipment contains three elements:TCAS I, a system which generates traffic advisories only; TCAS II, a system which generates traffic advisories and resolution advisories in the vertical plane; and TCAS III, a system which generates traffic advisories and resolution advisories in both the horizontal and vertical planes.

Since the late 1950's, the FAA and the airline industry have been searching for an airborne collision avoidance system as a backup to the ground-based air traffic control system. By the 1970's, several ACAS systems had been developed. However, none could be implemented without a significant amount of additional work to correct both technical and operational problems identified during FAA-sponsored testing. The selection of ACAS as the standard collision avoidance system would have required the installation of ACAS equipment in more than 200,000 U.S.-registered aircraft to provide a level of protection equivalent to that offered by TCAS. In addition, ACAS would have required moving airborne radar altimeters to another frequency band to eliminate electromagnetic interference caused by the operation of ACAS equipment.

Prior to the completion of the ACAS test phase, the FAA, in 1974, started development of an active Beacon-Compatible Collision Avoidance System (BCAS) in which aircraft equipped with BCAS interrogated all air traffic control (ATC) transponder-equipped aircraft and other BCAS aircraft. The reason for our interest in BCAS was twofold. If BCAS proved feasible, an aircraft equipped with BCAS would receive immediate protection against all aircraft carrying an operating ATC transponder and other BCAS-equipped aircraft. An ACAS-equipped aircraft would only be protected from other ACAS-equipped aircraft. Secondly, BCAS would put the cost burden on commercial air carriers, the segment of the aviation industry most able to afford it, and leave

the bulk of general aviation unaffected. ACAS would have required mandatory equipage of the bulk of general aviation to achieve a similar degree of protection.

The FAA dropped its development of ACAS and began to develop BCAS after the feasibility of BCAS was established in 1974 and after industry, including the general aviation community, stated a clear preference for BCAS over ACAS. From 1976 to 1981, our primary efforts were devoted to proving the BCAS threat evaluation and maneuver selection logic and improving hardware/software techniques. In June 1981, the FAA announced the decision to proceed with the implementation of an aircraft collision avoidance concept which we designated as TCAS. The TCAS concept was based on previous efforts in the BCAS program and on air-to-air communications techniques utilizing Mode S message formats. The objective of the TCAS approach was to provide a range of collision avoidance equipment alternatives that could provide some degree of collision protection for the full spectrum of airspace users. Unlike ACAS, TCAS interrogates the ATC transponder, already installed in all commercial and most general aviation aircraft, as the cooperative element.

The FAA has no requirement that general aviation aircraft he equipped with YCAS. We will, however, require that all aircraft with more than 30 seats 5e equipped with TCAS by 1991. We also have a rule requiring that all aircraft, general aviation included, be equipped with Mode C transponders when operating in terminal control airspace around our busiest airports.

At your convenience, I would be pleased to provide you and your staff a more detailed briefing concerning our TCAS program. If I can be of further assistance, please let me know.

Sincerely,

T. ALLAN MCARTOR, *Administrator.*

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